

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

| | | |
|---|---|--------------------------|
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-763-RGA |
| |) | |
| AMAZON WEB SERVICES, LLC, <i>et al.</i> , |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendants. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-764-RGA |
| |) | |
| EMC CORPORATION, |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-876-RGA |
| |) | |
| FACEBOOK INC., |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-877-RGA |
| |) | |
| LINKEDIN CORPORATION, |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| |) | |

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| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-880-RGA |
| |) | |
| ORBITZ, LLC, |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 12-1035-RGA |
| |) | |
| NETFLIX, INC., |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 13-367-RGA |
| |) | |
| GOOGLE INC., |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |
| PARALLEL IRON, LLC, |) | |
| |) | |
| Plaintiff, |) | |
| |) | |
| v. |) | C.A. No. 13-443-RGA |
| |) | |
| CLOUDERA, INC., |) | Public Redacted Version |
| |) | Dated: November 12, 2013 |
| Defendant. |) | |

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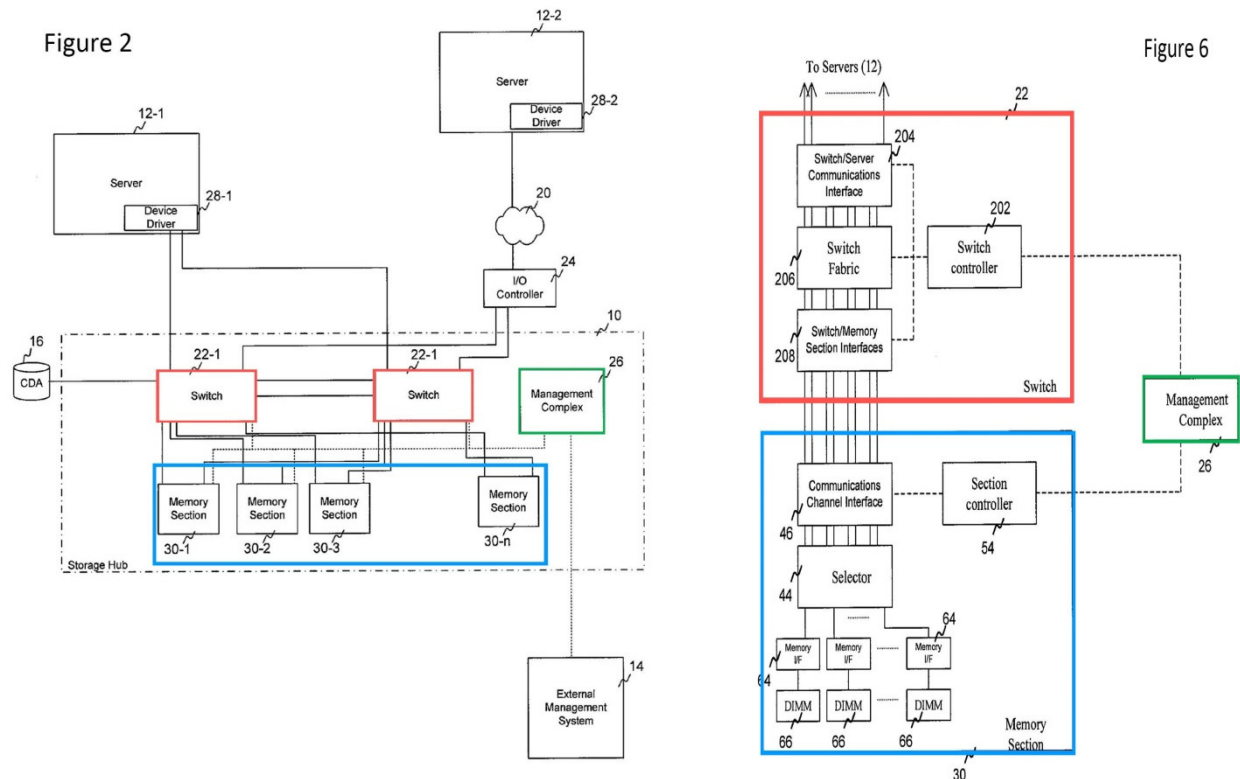
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I. DEFENDANTS' INTRODUCTION AND BACKGROUND

A. Overview of the Patents-in-Suit.¹

The Patents-in-Suit describe a computer data storage system suitable for storing large amounts of data from multiple servers on a network. The Patents-in-Suit do not purport to claim the concept of network-attached storage systems themselves; such systems existed long before the patents were filed. Rather, the Patents-in-Suit cover a specific type of storage system having the high-level architecture shown in FIG. 2. As recited by the claims and exemplified in FIGS. 2 and 6 (reproduced below), the storage system includes three main components: “memory sections,” “switches,” and a “management system.” *See, e.g.*, ’662 Patent, 4:51-60; 29:26-55.



Figures 2 and 6 (annotations added): ■ Memory Section ■ Switch ■ Management System

¹ Parallel Iron has asserted three patents in this case: U.S. Patent Nos. 7,197,662 (“’662 Patent”); 7,543,177 (“’177 Patent”); and 7,958,388 (“’388 Patent”) (hereinafter, the “Patents-in-Suit”). The Patents-in-Suit are related to one another and share a common specification. A detailed overview of the Patents-in-Suit is provided in the Declaration of Ian Justice.

As all the claims describe, a memory section is used for storing information transmitted by servers. A switch is used to direct data requests and associated data between the memory section and other components (including back to the server). And the management system controls the operation of the switches and the memory sections. *See, e.g.*, '662 Patent, claim 1 (29:42-50). The claims are directed primarily to a mechanism for handling faults in memory sections. When a memory section has a fault, the switches will execute a new routing algorithm to redirect requests that would otherwise have been directed at a faulty memory section to be handled by a working memory section instead. The process generally requires the management system to receive a fault message from one of the memory sections (*id.* at 29:42-43) and then direct one of the switches to execute an algorithm determined by the management system (*id.* at 29:45-50). The switch then executes the algorithm, causing a change in its internal connections, and resulting in the removal of the faulty memory section and replacement with a new memory section. *Id.* at 8:61-65 and 9:41-64.

B. Defendants' proposed constructions are consistent with the claim language of the Asserted Claims that require three separate components: (1) one or more memory sections; (2) one or more switches; and (3) a management system.

One of the primary disputes between the parties' proposed constructions is whether the asserted claims recite components that are separate from each other.² Each claim of the Patents-in-Suit recites the memory section, the switch, and the management system as separate components. *See, e.g.*, '662 Patent, claim 1; '177 Patent, claim 1; '388 Patent, claim 1. "Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention." *Becton, Dickinson & Co. v. Tyco Healthcare Grp.*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (quotations omitted). Since each and every independent claim recites these three elements separately, the "clear implication" is that those elements are "distinct components" of the asserted claims. Defendants' proposed constructions are consistent with this requirement, while Parallel Iron's ("PI") are not.

² *See infra* Terms 4, 5, 7, 10, and 12.

This “clear implication” is further confirmed by the claims’ express recitation of interactions among the recited components. For example, the claims require that the management system be “capable of receiving fault messages **from** the memory section controllers and removing from service the memory section from which the fault message was received, and wherein the management system is further capable of determining an algorithm **for use by** a switch fabric in interconnecting the memory sections and the external device interfaces, and **instructing the switch** to execute the determined algorithm.” *See e.g.*, ’662 Patent, claim 1 (29:42-50).³ Functional language requiring that information be passed **from** one component **to** another necessitates construing those components as distinct from one another. *L-3 Commc’ns Corp. v. Sony Corp.*, C.A. No. 10-734 (RGA), 2012 WL 2412158, at *3 (D. Del. June 22, 2012) (finding two elements to be distinct components when claims recited that electric charge moved “from” one to the other). Likewise, the claim language reciting functional language like “for use by,” “instructing,” and “interconnecting,” necessarily implies that each of the respective components are distinct from one another.

In addition, the Summary Section states, “[i]n accordance with the purposes of the invention, as embodied and broadly described herein, methods and systems for an apparatus are provided **including one or more memory sections, one or more switches, and a management system,**” and contains the same functional language requiring information be passed **from** one component **to** another. ’662 Patent, 2:11-32.⁴ The Federal Circuit has repeatedly held that

³ All emphases added unless otherwise noted.

⁴ The Detailed Description also confirms that the claimed storage hub requires these distinct components. *See, e.g., id.* at 4:51-55 (“FIG. 2 illustrates a more detailed block diagram of the storage hub As illustrated, the storage hub 10 **includes a switch or switches 22-1 and 22-2, a management complex 26, and memory sections 30-1 thru 30-n.**” And every Figure in the specification discloses these components as distinct and external to each other. *See* FIGS. 2, 6, 7 (illustrating the management complex, switch, and memory section as separate components within the storage hub, 10); FIGS. 5, 16 (illustrating memory section, with interfaces to management complex and switches that are necessarily external to memory section). The term “management complex” as used in the specification corresponds directly to the claimed “management system.”

statements describing the invention as a whole, including the Summary of the Invention, are more likely to support a limiting construction of claim terms. *EON-NET LP v. Flagstar Bancorp.*, 653 F.3d 1314, 1321-23 (Fed. Cir. 2011); *see also Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347-48 (Fed. Cir. 2004) (where the specification “repeatedly and consistently” describes a limiting feature of the invention, including in the “Summary” section, that limiting feature must be a part of the claimed invention); *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004) (“Statements that describe the invention as a whole . . . are more likely to support a limiting definition of a claim term. Statements that describe the invention as a whole are more likely to be found in certain sections of the specification, such as the Summary of the Invention.”).

C. Each of the disputed claim terms should be construed, and Parallel Iron cannot now ignore its earlier proposed constructions.

For a majority of the terms, PI proposes “plain and ordinary meaning” followed by alternative proposed constructions. *See infra*, Terms 1-7 and 9-12. “A determination that a claim term ‘needs no construction’ or has the ‘plain and ordinary meaning’ may be inadequate when a term has more than one ‘ordinary’ meaning or when reliance on a term’s ‘ordinary’ meaning does not resolve the parties’ dispute.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360-61 (Fed. Cir. 2008).

Thus, technical terms should not be construed as having their “plain and ordinary meaning” when such a construction does not help the trier of fact understand how one of ordinary skill in the art would interpret the meaning of those terms. PI recognized this legal necessity during the parties’ meet and confer and included definitions for disputed terms in the Parties’ Joint Claim Construction Chart (“JCC”). Thus, while PI claims that many terms have a “plain and ordinary meaning,” the actual disputes to be resolved may be identified by comparing PI’s “alternative” constructions to Defendants’ proposed constructions.

II. PLAINTIFF'S SUMMARY OF REPLY

The Court and one of skill in the art need not look any further than the claims of the '662, '177 and '388 patents ("Patents-in-Suit") themselves to ascertain the limits of the inventions. *See, Phillips v. AWH Corporation*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a bedrock principle of patent law that the claims of a patent define the invention.... Because the patentee is required to define precisely what his invention is ... it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms." (internal quotes omitted)). In addition, the patentees acted as their own lexicographer and explicitly defined many terms at issue. Defendants simply ignore the plain and ordinary meanings of the claim elements and explicitly defined terms and seek to improperly encumber the asserted claims with unsupported litigation-driven requirements.⁵

Defendants' "Overview of the Patents-In-Suit" is an attempt to turn bedrock claim construction jurisprudence including *Phillips* on its head and persuade the Court that every claim element must fall in line with what they urge is the true nature of the inventions of the Patents-in-Suit regardless of the claim language. Defendants confusingly and misleadingly leave out the permissive language used in the Summary of Invention and throughout the specification. They even argue that every claim must correspond with Figures 2 and 6 of the shared specification. Even if the law did not dictate that it is wholly improper to import limitations from the specification into the claims as Defendants suggest, the specifications itself makes clear that the claims determine the bounds of the invention, not the examples in the specification: "The

⁵ In addition, Defendants heavily rely on a declaration by an undisclosed expert, Ian Jestice, without giving Parallel Iron any notice that it intended to rely on such extrinsic evidence. Defendants use the Declaration mostly to support its arguments concerning "means plus" 112(6) limitations that are not the proper subject of this *Markman* hearing. The Court should strike and/or otherwise disregard the undisclosed and irrelevant declaration, because a) Defendants did not previously disclose the expert or their intention to rely on expert testimony to Parallel Iron, b) the Discovery Order in these cases forbid the use of testimony at the *Markman* hearing, and c) the declaration mostly if not entirely concerns "means plus function" elements to claims that Parallel Iron is no longer asserting against any Defendant.

summary and the following detailed description should not restrict the scope of the claimed invention.” ‘662 Patent at 2:33-34.

Accordingly, the Court, in accordance with *Phillips*, should do the same and not read purported limitations from examples in the specification into the claims.

III. DISPUTED TERMS⁶

1) “algorithm/routing algorithm”⁷

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|---|---|
| ‘662 Patent, claim 1, 4, 5, 6, 12, 13, 14, ; ‘177 patent, claim 1 , 13, 19; ‘388, claim 1, 2, 3, 7, 8, 12, 14. | Plain and ordinary meaning, or alternatively, rules in software for [configuring/changing] a path between an incoming interface and an outgoing interface | rules in software executed by a switch for [configuring/ changing] a path through the physical interconnections between an incoming interface and an outgoing interface, not including consulting a table |

Plaintiff’s Opening Position on Term 1

The terms “algorithm/routing algorithm” should be construed according to their plain and ordinary meaning. The term “algorithm” is understood by one of ordinary skill of art, and no additional construction of this term is necessary. For example, Merriam-Webster defines an algorithm as “a step-by-step procedure for solving a problem or accomplishing some end especially by a computer.” (www.merriam-webster.com). This standard definition makes no reference as to what can or cannot be consulted and does not require any physical connections.

In the event the Court decides that construction of this claim is required, the Court should remove the inclusion of a “physical interconnection” and the exclusion of “consulting a table” from Defendants’ proposed construction and construe the claim term as “rules in software for [configuring/changing] a path between an incoming interface and an outgoing interface.”

⁶ The parties’ agreed-upon constructions are contained in Exhibit B of the Revised Joint Claim Construction Chart, filed concurrently.

⁷ Following Plaintiff’s Opening Position on Terms 1 and 2, the parties provide combined responses for these terms.

Defendants' inclusion of these two limitations has no support in the specification or claim language and should be rejected.

First, there is no support for requiring that the algorithm or routing algorithm contain a physical connection. Although some of the preferred embodiments in the Patents-in-Suit describe using the algorithm to change the physical path through hardware, it is improper to write a limitation from the specification into the claims. *Phillips*, 415 F.3d at 1319-20. (“[O]ne of the cardinal sins of patent law [is] reading a limitation from the written description into the claims.”) (quoting *SciMed Life Sys., Inc.*, 242 F.3d at 1340). For example, claim 14 of the ‘662 Patent does not include the limitation of a “switch fabric,” which the Defendants propose construing to require a physical interconnection. (See claim term 6 below). Accordingly, claim 14 has a broad scope and that does not require any particular physical interconnection.” Thus, adopting Defendants’ proposed construction of a “physical interconnection” would inappropriately read a limitation from the specification into at least claim 14.

Second, there is no support for precluding the “algorithm/routing algorithm” from “consulting a table” as Defendants propose. The specification of the Patents-in-Suit broadly provides for “an algorithm for use by a switch fabric in interconnecting the memory sections and the external device interfaces . . .” ‘662 Patent, 2:24-33. Nothing in the specification limits how the algorithm performs this task. For instance in determining the path at issue “the switch controller 202 may, for example, consult a table that defines the relationship between data block identifiers and memory sections, use an algorithm to compute the address, *or use some other technique.*” ‘662 Patent, 14:55-59. Thus, far from providing support for Defendants’ attempt to exclude what can be consulted, the specification broadly discloses allowing many different techniques to be used including “consult[ing] a table.”

Furthermore, the proposed construction of “not consulting a table” is a negative claim limitation. “Negative claim limitations are adequately supported when the specification describes a reason to exclude the relevant limitation.” *Santarus v. Par Pharma*, 694 F.3d 1344, 1351 (Fed. Cir. 2012). Not only does the specification not support this negative limitation, as

noted above, it expressly allows for “consult[ing] of a table.” See ‘662 Patent, 14:55-59. Accordingly, the Court should reject Defendants’ attempt narrow the scope of this claim term and adopt the plain and ordinary meaning, or alternatively, Parallel Iron’s construction without Defendants’ improper limitations.

2) “determining [an algorithm / a routing algorithm] for use by the switch [fabric / controller] in interconnecting”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|--|--|
| 662 Patent, claim 1; ‘177 Patent, claim 1, 13, 19; ‘388 Patent, claim 1. | Plain and ordinary meaning, or alternatively, determining the rules in software to [configure/change] a path for [connecting one component with another / routing data between components] | determining the rules in software to be executed by a switch to [configure/change] a path through the physical interconnection for [connecting one component with another / routing data between components], the determination not including consulting a table |

Plaintiff’s Opening Position on Term 2

The term “determining the rules in software to [configure/change] a path for [connecting one component with another/routing data between components],” should be construed according to its plain and ordinary meaning. As addressed above, the term “algorithm” is well known to one of ordinary skill of art and is a well-defined term. Determination of an algorithm (*i.e.*, rule) for use by a switch for interconnection needs no construction.

Alternatively, this term should be construed as “determining the rules in software to [configure/change] a path for [connecting one component with another/routing data between components].” As with certain terms above, the Defendants’ construction seeks to unduly narrow this term by limiting it to a “physical interconnection” and “not consulting a table.” The specification of the Patents-in-Suit provides no limitation on how an algorithm is used in interconnecting the memory sections. Instead, it provides for “an algorithm for use by a switch fabric in interconnecting the memory sections and the external device interfaces . . .”

‘662 Patent, 2:24-33. To the extent there are additional limitations on how an algorithm is used, those limitations would be present in other portions of the claims.

As noted above, although some of the preferred embodiments in the Patents-in-Suit describe using the algorithm to change the physical path through hardware, it is improper to write a limitation from the specification into the claims. *Phillips*, 415 F.3d at 1319-20 (“[O]ne of the cardinal sins of patent law [is] reading a limitation from the written description into the claims.”) (quoting *SciMed Life Sys., Inc.*, 242 F.3d at 1340).

For example, claim 13 of the ‘177 Patent lacks the term “switch fabric,” which is construed by the Defendants to be a physical interconnection. (See claim term 6 below). Claim 13 of the ‘177 Patent was written with a broad scope and not limited to any particular physical interconnection. The algorithm of claim 13 does not necessarily have to execute a switch for configuring a path to a physical interconnection because this claim lacks a switch fabric altogether. The physical interconnection limitation that the Defendants seek to read into the term algorithm is the definition of the term “switch fabric” provided by the Defendants and not that of the term “algorithm/routing algorithm.”

For the additional reasons stated for claim term 4, above, the Court should reject the Defendants’ narrow construction requiring “not consulting a table” and “physical interconnections.”

Defendants’ Answering Position on Terms 1 and 2:⁸

For both of these terms, the dispute centers on what “algorithm”/“routing algorithm” means in the context of the asserted patents. PI contends that the terms should be given their plain and ordinary meaning. However, the specifications of the patents, the claim language, and the prosecution history, describe these terms to mean: “rules in software for [configuring/

⁸ Defendant EMC Corporation served a supplemental Answering Claim Construction Brief in support of its positions on Terms 1 and 2 pursuant to paragraph 12 of the Scheduling Order. EMC’s brief was filed as D.I. 71 in C.A. No. 12-764. Plaintiff Parallel Iron did not serve a separate reply to EMC’s brief.

changing] a path through the physical interconnections between an incoming interface and an outgoing interface, not including consulting a table.” PI’s proposal of plain and ordinary meaning ignores the contextual meaning set forth in the patents and fails to give necessary guidance to the jury. Thus, PI’s plain and ordinary meaning proposal should be rejected.

At the outset, PI ignores the primacy of the intrinsic record when construing a claim term. *See, e.g.*, ’662 Patent, 9:45-47, 9:60-65, 14:38-64, 19:28-30, 29:27-55, FIGS. 2, 6, 7-9; ’177 Patent, 28:41-67, 29:55-30:10; ’388 Patent, 28:39-29:17; *see also* JCC, Ex. 1 at 3 (Reply to Office Action of July 18, 2004);⁹ JCC, Ex. 10 at 30-31 (Reply to Office Action, Feb. 21, 2006); JCC, Ex. 4 at 1 (Response dated Aug. 13, 2008).

PI instead proceeds directly to extrinsic evidence, primarily an undated, non-technical, website, *i.e.*, www.merriam-webster.com. (*See supra*, PI Term 1 Op.) Claim construction, however, must be based on what a person of ordinary skill in the art would have understood the terms to mean **at the time of the invention**. *See Phillip,s* 415 F.3d at 1315. Instead, PI improperly relies on extrinsic definitions appearing at least a decade after the time of the invention.¹⁰

In addition to this extrinsic definition, PI proposes an alternative construction, which differs from Defendants’ proposed construction in two key aspects: (1) it does not account for execution by a switch to configure or change physical interconnections; and (2) it is so broad it necessarily includes “consulting a table,” which PI disclaimed during prosecution.

A. Defendants’ construction properly accounts for executing an algorithm.

Each asserted claim uses the term “algorithm” or “routing algorithm” in the context of it being executed by a switch to *change/configure the interconnections of a switch fabric*. For example, claim 1 of the ’662 Patent recites “determining an algorithm for use by a switch fabric . . . and instructing the switch to execute the determined algorithm;” claim 1 of the ’177 Patent

⁹ Citations to “JCC” refer to Exhibits to the Revised Joint Claim Construction Chart, filed concurrently.

¹⁰ The effective filing date of the Patents-in-Suit is October 31, 2002.

recites “routing algorithm for use by the selectively configurable switch fabric;” and claim 1 of the ’388 Patent recites “routing algorithm for use by the selectively configurable switch fabric.” Defendants’ proposal captures this context by explaining that rules in software are “executed by a switch for [configuring/ changing] a path through the physical interconnections.”¹¹ PI’s proposal ignores this context. PI disputes that the algorithm must be executed by a switch. Although PI is correct that claim 14 of the ’662 Patent does not recite a “switch fabric,” it recites a “switch,” and PI agrees that “switch fabric” is the structure of the claimed “switch.” (*See infra*, PI Term 6 Op.) Further, even claim 14 of the ’662 patent—to which PI points to as not reciting a “switch fabric—requires that the algorithm be “for use by a switch in connecting the memory section and an external device interface.” Contrary to PI’s contentions, this claim, by requiring that the algorithm be used “in connecting” the memory section and an external device interface, likewise requires that physical interconnections be configured or changed.

Although PI agrees that a proper construction of “algorithm/routing algorithm” includes “configuring/changing a **path** between an incoming interface and an outgoing interface,” its proposal does not explain what the path constitutes or how this path is configured or changed. PI maintains that the path need not be through “physical interconnections.” (PI Term 6 Op.) But it is not clear from PI’s proposal what a “non-physical” path would be or how something that is not physical could be configured or changed. Defendants’ proposed construction addresses this ambiguity by explaining that the path is formed “through physical interconnections between an incoming interface and an outgoing interface.” This is consistent with how the specification describes the use of “algorithm/routing algorithm” to configure a path. For example, FIG. 8 of the specification identifies paths “1,” “2,” “3,” and “P” between physical interconnections of SSCI 204-M and SMCI 208-2. The specification explains that the “switch controller 202 . . . may **establish a transmission path** through each switching plane 808 for each of the parallel lines P from the device driver 28 to the SMCI 208 corresponding to the determined memory section 30.”

¹¹ The claims and specification use the terms “configuring” and “changing” interchangeably, such that they mean the same thing in this context.

'662 Patent, 14:60-64. PI does not dispute that these transmission paths are physical paths that travel through physical switching planes and are configured or changed based on execution of an algorithm by switch 22.

Indeed, in distinguishing prior art while prosecuting the '177 Patent and related patent applications, Applicants repeatedly characterized the algorithm/routing algorithm as being executed to change an interconnection between physical components and/or to connect physical components.¹² For example, they characterized the prior art system as including a “nonconfigurable, hardwired **interconnection** from the memory segments 24 via bus segments 22 to bus 52 connected to external devices 32-36.” JCC, Ex. 1 at 3 (Reply to Office Action of July 18, 2004). Applicants contended that the reference’s nonconfigurable interconnections were “in contrast” to “the configurable switch fabric” that “**interconnect[s]** the memory sections and the external device interfaces based on an algorithm.” *Id.* (emphasis added). They distinguished the prior art by stating that “[the prior art’s] control mechanism 58 and controller-ordered state changes do not change **the interconnection** between external devices 32-36 and memory segments 24 based on an algorithm, and thus do not teach or suggest the features recited in claim 1.” *Id.* at 6.

When prosecuting a related application, Applicants also distinguished prior art by asserting that it did “not anticipate the claimed management system and intelligent switches that use the destination identifier to forward data (claims 9, 26) and use an algorithm **to connect** memory sections to communications channels.” JCC, Ex. 10 at 30-31 (Reply to Office Action, Feb. 21, 2006). Similarly, when prosecuting a related foreign patent application,¹³ Applicants

¹² The prosecution history of the '177 patent is also intrinsic evidence for the '662 and '388 patents. *See, e.g., Microsoft Corp. v. Multi-Tech Sys.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (“[a]ny statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction”); *see also e.g., Ormco Corp. v. Align Tech., Inc.*, 498 F.3d 1307, 1314 (Fed. Cir. 2007); *Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1460 n.2 (Fed. Cir. 1998).

¹³ *See, e.g., Gillette Co. v. Energizer Hldgs., Inc.*, 405 F.3d 1367 (Fed. Cir. 2005) (finding statements made by patentee in a foreign counterpart instructive for purposes of claim construction).

described their algorithm as “a routing algorithm for determining the interconnection between a memory section (*e.g.*, memory section 30) and an external device interface” and contended that the prior art “X-bar switch does not interconnect based on the execution of an algorithm.” JCC, Ex. 4 at 1 (Response dated Aug. 13, 2008).

PI cannot now attempt to recapture with its claims an “algorithm/routing algorithm” that does not configure/change a path through physical interconnections. *Southwall Techs. Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (“claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.”)

B. Consulting a table is outside the scope of “algorithm / routing algorithm.”

As evidenced by the specification, “consulting a table” is not within the scope of the asserted claims. As PI admits, “[n]egative limitations are adequately supported when the specification describes a reason to exclude the relevant limitations.” *Santarus v. Par Pharma*, 694 F.3d 1344, 1351 (Fed. Cir. 2012); PI Term 1 Op. This is exactly the case here. The specifications of the Patents-in-Suit repeatedly treat “consulting a table” as something different than using an algorithm. *See, e.g.*, ’662 Patent, 14:55-59 and 18:53-58. For example, when describing how to identify the memory section targeted in a data request, the patent specification states (’662 Patent, 14:55-59 and 18:53-58):

To determine the memory section 30, the switch controller 202 may, for example, **consult a table** that defines the relationship between data block identifiers and memory sections, **use an algorithm** to compute the address, **or** use some other technique. . . .

For example, when a data request arrives at an SSCI 204 of a switch 22, the SSCI may, for example, direct the data request to the switch controller 202, which may then, **use a table** to look up the address corresponding to the DBI, **use an algorithm** to compute the address from the DBI, **or** use some other method.

As these excerpts show, using a table to “look up the address” is different and distinct from using any algorithm, let alone a routing algorithm. Moreover, merely looking up an address is insufficient to identify a path that PI agrees must be configured or changed by using a routing algorithm. (PI Term 1 Op.) Simply put, using a table to “look up” an address does not explain

which route should be changed to get to that address. Following this express guidance in the specification demonstrating that consulting a table is an alternative, *unclaimed* method, the Court's construction should make clear that performing an algorithm is different from, and does not include, consulting a table. "It is not necessary that each claim read on every embodiment" and excluding a disclosed embodiment is proper when the specification makes "a direct contrast" between the embodiments." *Baran v. Medical Device Techs., Inc.*, 616 F.3d 1309, 1315-1316 (Fed. Cir. 2010); *see also Haemonetics Corp., v. Baxter Healthcare Corp.*, 607 F.3d 776, 782 (Fed. Cir. 2010) (excluding a disclosed embodiment when claim language tracks the non-excluded embodiment). Here, the patentee distinguished using a table from using an algorithm, and the claim explicitly requires the use of an "algorithm." PI cannot write "using a table" into these claims when the specification unequivocally distinguishes using a table from using an algorithm.

The Court should construe the claims to protect what the inventor actually invented, and no more. *See Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). A review of the claims, the specification, and prosecution history demonstrates that what the inventor actually conceived of was an algorithm to configure or change physical interconnections linking an incoming interface to an outgoing interface. And in the claims, the patentee claimed only an algorithm, not the alternative disclosed approach of consulting a table. Thus, after considering the intrinsic evidence, a person of ordinary skill in the art would have understood: (1) "algorithm/routing algorithm" to mean at least "rules in software for [configuring/changing] a path through the physical interconnections between an incoming interface and an outgoing interface," and given the specification, a person of ordinary skill in the art would have understood "algorithm/routing algorithm" also to not include consulting a table; and (2) "determining [an algorithm / a routing algorithm] for use by switch [fabric/controller] in interconnecting" to mean "determining the rules in software to be executed by a switch to [configure/change] a path through the physical interconnections for [connecting one component

with another / routing data between components], the determination not including consulting a table.”

Plaintiff’s Reply Position on Terms 1 and 2:

Perhaps no place is Defendants’ tactic to burden ordinary terms with litigation-driven limitations more apparent than their proposed limited construction of the term “algorithm.” Defendants do not allege that this term is confusing in any way and simply seek to load it with unsupported limitations. This is improper. *See E.I DuPont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988) (holding that it is improper to read a limitation “into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim”). Notwithstanding Defendants’ improper attempt to add limitations to “algorithm,” nowhere in the specification do the inventors attempt to limit this term. Therefore, Defendants’ proposed construction is groundless.

A. Neither the claims nor the specification require that the “algorithm” alter a physical connection.

The word “physical” is not present (1) in any asserted claim or (2) anywhere in the specifications. Defendants’ justification for inserting the improper limitation that the “algorithm” act on a “physical” connection is that the added limitation “is consistent with how the specification describes the use of the ‘algorithm/routing algorithm’ to configure a path.” Defendants fail to point to any intrinsic evidence that would *exclude* a non-physical (e.g., logical) path.

Defendants rely on Figure 8 of the shared specification in their misguided attempt to burden a broad pervasively-used term in computer science and engineering. The argument fails for several reasons. *First*, Figure 8 is expressly described as an “alternative exemplary switch.” (‘662 Patent at 14:22.) In other words, Figure 8 is an alternative embodiment, (‘662 Patent 14:21-22) and its use of a “transmission path” in no way limits the use of the term “algorithm” in the claims. *Second*, a “path” can be logical and not necessarily physical.

Operating systems have long used logical “file paths” to identify the locations of files.¹⁴ *Third*, even though the example in Figure 8 does depict a physical path that is altered by an algorithm, the inventors make clear that this single example does not limit the claims. (14:22.) Indeed, the specification describes an embodiment of the invention where the switch re-routes a transmission path by altering a “data request” -- not changing a physical connection. *See* ‘662 Patent at 14:60-15:3:

Once the memory section is determined, the switch controller 202 then may establish a transmission path through each switching plane 808 for each of the parallel lines P from the device driver 28 to the SMCI 208 corresponding to the determined memory section 30. The data request may also be modified by the switch controller 202 to contain a new address that may be used by the switch 22 in directing the data request to the correct memory section 30...

This comports with the specifications’ description of a conceptual “switching plane” rather than describing a physical connection such as a specified wire or cable and describes addressing as a method of establishing a “transmission path” rather than physical manipulation.

Defendants’ attempt to use statements in the prosecution history, taken out of context, also does not support their proposed construction. The patentees’ statements during the prosecution of the ‘177 patent, quoted by Defendants, focused on distinguishing prior art based on the fact that the prior art reference at issue (*Ferguson*) contained interconnections that were not configurable. JCC, Ex. 1 at 3 (Reply to Office Action of July 18, 2004). The *Ferguson* reference at issue in that Reply contained physical “hardwired” connections. The fact that applicants distinguished the invention from that “hardwired” reference argues against Defendants’ attempt to force a limitation on the term “algorithm” to require it to control “physical interconnections.”

Similarly, the Applicants’ statements during prosecution of a related application do not support Defendants’ proposed additional limitations on “algorithm.” Defendants present no

¹⁴ *See, e.g.*, IEEE 100 Dictionary (7th ed. 2000) (defining “path” as “[i]n software engineering, a sequence of instructions that may be performed in the execution of a computer program” and “[i]n file access, a hierarchical sequence of a directory and subdirectory names specifying the storage location of a file”).

explanation regarding how the applicants' statement that an algorithm may "connect" "memory sections to communications channels" in any way limits any connection to a "physical" connection. *See* JCC, Ex. 4 at 1 (Response dated Aug. 13, 2008).

If anything, the intrinsic evidence presented by Defendants refutes their argument to artificially encumber the term "algorithm/routing algorithm" because the claims, specification and prosecution history do not mention physical limitations and patentees distinguished "hard-wired" prior art during the prosecution history.

B. Neither the specifications nor the claims exclude "consulting a table" from the "algorithm."

Defendants' argument that the term algorithm may not include rules that might at any point "consult a table" is without basis. The specification contains no such limitation. Indeed, it provides the opposite – it expressly discloses using a table. The specification makes clear that the switch controller may "consult a table" or "use a table" to, for example, determine addresses. ('662 Patent at 14:55-59 and 18:53-58.) The specification never states that the switch controller can only "consult a table" if it does not use an algorithm. It does not state that an algorithm can never get data from consulting a table. Yet, this is exactly the construction Defendants seek. In fact, the specification makes clear that, for one function, the switch controller can determine addresses by "some other technique" or "some other method" than solely using an algorithm or table. *Id.* Defendants also admit that the claimed algorithm potentially performs additional functions other than solely determining addresses, but point to no evidence that the applicants disclaimed any algorithms' use of a "table."

Defendant EMC Corporation's ("EMC") Answering Brief adds nothing to Defendants' arguments regarding these terms. As explained above, neither the specification nor the claims exclude a claimed algorithm from using a "table" to fulfill its function. Simply because the specification describes as "an example" that in one embodiment the switch controller can route data by (1) consulting a table; (2) using an algorithm, *or* (3) some other technique, does not mean that the patents exclude having the algorithm from ever consulting a table. ('662 Patent at 14:55-

59.) Indeed, having the algorithm consult a table to route data is an example of “some other technique” expressly provided by the specifications. Defendants’ unsupported attempt to limit this term should be rejected.

Defendants’ Sur-Reply Position on Terms 1 and 2:

It is undisputed that each asserted claim uses the term “algorithm” or “routing algorithm” in the context of the algorithm being executed by a switch to *change/configure the interconnections of a switch fabric*. (See Defs’ Term 1 and 2 Ans.; PI Term 1 and 2 Reply.) PI also agrees that switch fabric is “the underlying structure” of a switch and is “expressly defined” to include a “physical interconnection architecture.” (PI Term 6 Reply.) Thus, in view of the claim language requiring an “algorithm”/“routing algorithm” to be executed by a switch that PI agrees includes a physical interconnection architecture, Defendants’ construction is proper.

PI instead alleges that an “algorithm”/“routing algorithm” is not limited to configuring a path through physical interconnection at least because “the word ‘physical’ is not present (1) in any asserted claim or (2) anywhere in the specification.” (PI Term 1 and 2 Reply.) This is incorrect.

First, PI’s allegation that the word “physical” is not present “anywhere in the specification” is false. The word “physical” is present throughout the specifications of the Patents-in-Suit including—as PI agrees—when describing a “switch fabric,” which executes an algorithm. *See e.g.*, ’662, 2:50-53, 5:57-59, 5:65-66, 6:1-2, 6:5-8, and 7:17-18 (“the term ‘switch fabric’ [is] the physical interconnection architecture that directs data from an incoming interface to an outgoing interface”); PI’s proposed construction for “switch fabric.” Second, as noted above, PI does not dispute that the terms “algorithm”/“routing algorithm” are used in the claims within the context of being executed by a switch to change/configure the interconnections of a switch fabric, where switch fabric is “expressly defined” in the specification to include a “physical interconnection architecture.” Thus, while the claims do not explicitly recite the word “physical,” the scope of the claims is properly limited to physical interconnections.

To support its view that the claims are not limited to configuring/changing a path through the physical interconnections, PI cites to extrinsic evidence, *i.e.*, an IEEE dictionary, stating that a path “can be logical and not necessarily physical. Operating systems have long used logical ‘file paths’ to identify the location of files.” (PI Term 1 and 2 Reply.) PI’s reliance on this extrinsic evidence is improper because none of the Patents-in-Suit describe a “logical path.” Even if a logical path can be non-physical, PI has not explained how a logical path can be used for “interconnecting” claimed physical components, as required by the claims. Merely identifying a location of a file will not functionally accomplish connecting two physical components.

PI asserts that “the specification describes an embodiment of the invention where the switch re-routes a transmission path by altering a ‘data request’ – not changing a physical connection.” (PI Term 1 and 2 Reply.) This is incorrect. The specification discloses modifying and “directing the data request.” ’662, 14:60-15:3. PI does not explain how the disclosure of modifying a data request is related to execution of an “algorithm”/“routing algorithm.” Further, merely modifying a data request is not sufficient to “interconnect” claimed physical components, such as “memory sections” with “one or more interfaces” of a switch, as required by each of the asserted claims.

The prosecution histories of the ’177 Patent and related patent applications also support Defendants’ construction. The applicants did not distinguish the prior art from the claims based on physical connections—as PI now contends—but instead argued that the prior art’s nonconfigurable interconnections were “in contrast” to “the configurable switch fabric” that were used to “**interconnect** the memory sections and the external device interfaces.” (PI Term 1 and 2 Reply.) Thus, even the prosecution history explains that the configurable connections were physical connections used to interconnect physical components.

Further, PI’s suggestion that an “algorithm”/“routing algorithm” can include consulting a table is contradicted by the patents themselves. *See* ’662 Patent, 14:55-59 and 18:53-58. As PI points out, the Patents-in-Suit disclose that “the switch controller can route data by (1) consulting

a table; (2) using an algorithm, *or* (3) some other technique.” (PI Term 1 and 2 Reply.) Thus, the Patents-in-Suit distinguish “consulting a table” from “using an algorithm” and “some other technique” by using an “or.” ’662 Patent, 14:55-59 and 18:53-58. If “using an algorithm” included consulting a table, the Patents-in-Suit would not have identified them as distinct possibilities.

Thus, after considering the claim language and intrinsic evidence, a person of ordinary skill in the art would have understood “algorithm/routing algorithm” to mean “rules in software for [configuring/changing] a path through the physical interconnections between an incoming interface and an outgoing interface, not including consulting a table.”

3) “interconnecting the memory sections and the external device interfaces based on an algorithm”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|--|---|
| ’662 patent, claim 1, 4, 5, 6, 12, 13; ’177 patent, claim 1; ’388 patent, claim 1. | Plain and ordinary meaning, or alternatively, executing rules in software to configure selected interconnections based on an algorithm so as to connect the memory section and the external device | executing rules in software to configure selected physical interconnections based on an algorithm so as to connect the memory section and the external device |

Plaintiff’s Opening Position on Term 3:

This term should be construed according to its plain and ordinary meaning, or alternatively, as “executing rules in software to configure selected interconnections based on an algorithm so as to connect the memory section and the external device.” Again, Defendants seek the same construction that unduly narrows the term to “physical interconnections.” However, the limitation “physical” appears nowhere in the claim term. The Patents-in-Suit do not limit this claim term to a physical interconnection, instead using “interconnecting” to encompass all manners of connection. There is no support in the plain meaning of the claim term or the specification to construe this claim term to be limited to a physical connection.

As noted earlier, although some of the preferred embodiments in the Patents-in-Suit describe using the algorithm to change the physical path through hardware, there is no clear and unambiguous disclaimer, and it is improper to write a limitation from the specification into the claims. *Phillips*, 415 F.3d at 1319-20 (“[O]ne of the cardinal sins of patent law [is] reading a limitation from the written description into the claims.”) (quoting *SciMed Life Sys., Inc.*, 242 F.3d at 1340). The Defendants have construed “switch fabric” to be a physical interconnection (See claim term 13 below). The specification does not require that the algorithm make use of a “physical interconnection” (see arguments for claim term 4, above), and it should not added to this proposed construction.

Other than addition of the limitation of “physical interconnections,” the Defendants’ proposed construction is nothing more than a restatement of the claim elements in a more complicated form. The Court should adopt the plain and ordinary meaning of this term, or Parallel Iron’s proposed construction which does not have these limitations.

Defendants’ Answering Position on Term 3:

Contrary to PI’s assertion, “interconnections” are physical, tangible parts of a storage system. For the same reasons articulated with respect to terms 2 and 3, based on the claim language, specification, and prosecution history, a person of ordinary skill in the art would understand this term to mean “executing rules in software to configure selected physical interconnections based on an algorithm so as to connect the memory section and the external device.”

PI’s proposed construction of “executing rules in software to configure selected interconnections based on an algorithm so as to connect the memory sections and the external device interfaces” is inconsistent with the claim language for the additional reason that it is unclear—either with or without reference to the specification—how hardware components such as “memory sections” and “external device interfaces” can be interconnected with “non-physical” interconnections.

Plaintiff's Reply Position on Term 3:

Defendants provide no additional reasoning to support their proposed construction that would limit this element to “physical” interconnections. As explained above, nowhere do the claims or specification exclude logical or software connections. The patentees state multiple times in the specification that the best mode should not limit the claims (‘662 Patent at 2:33-40, 10:57-67; 13:27-32; 20:45-49; 29:14-25) and in any case, the patentees do not describe the schematic “block diagram” drawings, and in particular Figure 2, as being limited to physical connections. Defendants have no basis in the claim language, specification, or file history to import such a limitation.

Defendants' Sur-Reply Position on Term 3:

For the same reasons articulated with respect to “algorithm”/“routing algorithm,” a person of ordinary skill in the art would understand this term to mean “executing rules in software to configure selected physical interconnections based on an algorithm so as to connect the memory section and the external device.”

4) “switch”

| Claims | Parallel Iron's Position | Defendants' Position |
|---|----------------------------|---|
| 177 Patent: claims 5, 6, 8, 13, 14, 15, 16, 17, 18; '388 Patent: claims 2, 4, 5, 8, 9, 12, 13, 14, 15, 16; '662 Patent: claims 1, 3, 5, 12, 13, 14, 16, 17, 19, 20, 21. | Plain and ordinary meaning | A device, external to the memory section and a management system, that includes one or more interfaces and a switch fabric, and that directs data requests and associated data between the memory section and other components of the system outside the switch |

Plaintiff's Opening Position on Term 4:

The term “switch,” should be construed according to its plain and ordinary meaning. The term is commonly used in the art and requires no construction. Indeed, the specification notes that its use of the term does not refer to any particular device, but instead, “the switch 22 may be any type of commercially available switch.” ‘177 Patent, 13:26-27. As the patent does not either (1) provide its own definition of this phrase; or (2) disavow the full scope of this term, the

“ordinary and customary meaning” of this term should be used. *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (“The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in [unless] 1) . . . a patentee sets out a definition and acts as his own lexicographer, or 2) . . . the patentee disavows the full scope of a claim term either in the specification or during prosecution.”).

That “switch” is a broad term is also in keeping with definitions of the term provided by relevant treatises in the art. For example, the IEEE 100 Dictionary (7th ed. 2000) defines a “switch” (1) in computer systems as “[a] device *or programming technique* for making a selection;” and (2) in electronics as “an electrical or mechanical device used for opening, closing, or changing the connection of a circuit.” Thus, according to these definitions, as in the specification, a “switch” does not need to be a physical or specific device, but can be something as simple as a “programming technique.”

Defendants’ proposed construction would narrow the term “switch” to “a device, external to the memory section and a management system.” This construction finds no support in the specification. Indeed, the specification discusses the different arrangements of the switch as “alternative embodiments.” ‘177 Patent, 13:51-52. The specification further states that “the switch 22 includes a switch/server communications interface 204 for interfacing with a server 12, a switch/memory section communications interface 208, a switch fabric 206, and a switch controller 202.” 13:15-18. Nothing in the specification limits the term “switch” to a particular type of switch (such as a device, external to the memory section and a management system). Indeed, the switch can be any component (software or hardware) that directs data. Accordingly, the Court should reject Defendants’ proposed construction and determine that the plain and ordinary meaning applies.

Defendants Answering Position on Term 4:

A “switch,” in the context of the Patents-in-Suit, is a device that includes one or more interfaces and a switch fabric and directs data between memory sections (where data is stored)

and external devices (where data may be stored or accessed). The claimed “switch” is a core technical component of the claimed invention and must be understood in context of its recited functions.

A. A switch must direct data requests and associated data between a memory section and other components of the system outside the switch.

Nothing in PI’s brief undercuts Defendants’ position that a switch “directs data requests and associated data between the memory section and other components of the system outside the switch.” In the terminology of the Patents-in-Suit, a “switch” includes (1) “interfaces” to external devices and (2) a “switch fabric . . . interconnecting . . . memory sections and the external device interfaces.” ’662 Patent, 2:19-24. A “switch fabric,” in turn, is the “the physical interconnection architecture that directs data from an incoming interface to an outgoing interface.” *Id.* at 6:6-8. Thus, a switch is a device that, using its switch fabric, directs data (and requests for data) from one interface of the switch (an “incoming” interface) to another interface of the switch (an “outgoing” interface). One of these interfaces leads to a memory section, and the other to an external device—both components that are “outside the switch.” (*See infra* Defs’ Term 4 Ans. §C.) So a switch directs data requests, and associated data, between a memory section and other components (*i.e.*, external device) of the system outside the switch.

None of this would be evident to a jury without construction and nothing in PI’s brief contests this substantive point. The Court should construe “switch” accordingly.

B. The switch is distinct from the memory section and the management system.

Again, as set forth in Defendants’ Introduction, *supra*, the claimed storage system includes at least three discrete components: one or more memory sections; one or more switches; and a management system. The claims and specification further reinforce the fact that each of these components interacts with the others in specific ways that require each component to be distinct. *See supra* I.B. Defendants’ construction is consistent with a plain reading of the claim and the functional language therein, which necessitates treating the switch as separate and

distinct from the memory section and the management system. *See Becton*, 616 F.3d at 1254; *L-3 Commc'ns Corp.*, 2012 WL 2412158, at *3.

C. The switch includes “interfaces” and a switch fabric.

The specification and the claims make clear that the switch is a device that includes a switch fabric. As noted above, the “Summary” section of the Patents-in-Suit explains that a switch “include[s] **one or more interfaces** for connecting to one or more external devices, **and a switch fabric** connected to one or more memory sections and the external device interfaces and interconnecting the memory sections and the external device interfaces.” ’662 patent at 2:19-24. Likewise, every independent apparatus claim across all three Patents-in-Suit requires that the switch include “one or more interfaces for connecting to one or more external devices” and “a [selectively configurable] switch fabric.” *See, e.g.*, ’662 Patent at 32:38-41; ’177 Patent at 28:48-53; ’388 Patent at 28:46-51. Indeed, PI itself has admitted that the switch fabric comprises “the underlying structure” of the switch. (PI Term 6 Op.) *See EON-NET LP*, 653 F.3d 1314, 1321-23 (Fed. Cir. 2011) (explaining that statements about the invention in the “Background” and “Summary” sections “describe and define the invention overall”); *Microsoft Corp.*, 357 F.3d 1340 at 1347-48 (where the specification “repeatedly and consistently” describes a limiting feature of the invention, including in the “Summary” section, that limiting feature must be a part of the claimed invention); *C.R. Bard, Inc.*, 388 F.3d 858 at 864 (“Statements that describe the invention as a whole . . . are more likely to support a limiting definition of a claim term. Statements that describe the invention as a whole are more likely to be found in certain sections of the specification, such as the Summary of the Invention.”).

Thus, in the terminology of the Patents-in-Suit, a switch fabric is a component of the switch. Because the specification consistently refers to a switch as a device that includes interfaces and a switch fabric, and because this requirement is universally echoed in all the claims, the Court should adopt this requirement in its construction.

D. A switch is a “device,” and not a “programming technique.”

Contradicting the plain language of the claim, PI suggests that a switch may be merely a “programming technique.” (PI Term 4 Op.) A “programming technique” cannot include physical components like interfaces or a switch fabric as required by the claims. As explained *supra* 24-26, the claim language explicitly recites that the switch includes “interfaces” and “a switch fabric.” *See, e.g.*, ‘662, claim 1; ‘177 claim 1; and ‘388 claim 1. Further, the claim language requires the management system to “instruct the switch” to execute an algorithm. Indeed, PI agrees that the switch fabric is the structure or fabric of the switch and is a “physical interconnection architecture.” (PI Term 6 Op.) A “programming technique” does not include physical components like interfaces or a switch fabric as the claims require. PI does not explain how a “programming technique” can include such components or be instructed to execute an algorithm. The specification¹⁵ and the file history of the ‘177 Patent¹⁶ also do not provide any support for PI’s position that a switch may be merely a programming technique.

Accordingly, the Court should adopt Defendants’ proposed construction, which is consistent with the plain claim language and the intrinsic record.

Plaintiff’s Reply Position on Term 4:

Defendants seek an unduly long and drawn out construction that introduces confusion rather than clarity and improperly adds limitations. The specification (‘177 Patent at 13:26-27) states that the switch can be “any type of commercially available switch,” and the claims dictate its function. Defendants’ attempt to selectively quote claims and to connect limitations from embodiments in the specification to draw its own picture of what constitutes a “switch” in the

¹⁵ The specification describes switches as devices 22-1 that include components for executing software and connecting external components. *See, e.g.*, ‘662, FIGS. 2, 6, and 8.

¹⁶ During prosecution of the ‘177 Patent, Applicant distinguished the claims from the prior art by contending that *Ferguson’s* nonconfigurable interconnections were “in contrast” to “the configurable switch fabric” that “interconnect[s] the memory sections and the external device interfaces based on an algorithm.” JCC, Ex. 1 at 3. Thus, agreeing that a switch includes physical interconnections that are used to connect components of a system.

asserted patent is improper. Such an attempt to read purported limitations from the specification to the claims is not sanctioned by *Phillips*.

First, as explained above, nothing in the claims or specifications requires a claimed “switch” to be distinct from the memory section and the management system. In fact, Figure 2 depicts switches together with the memory section and management system in the same functional block of an exemplary storage hub:

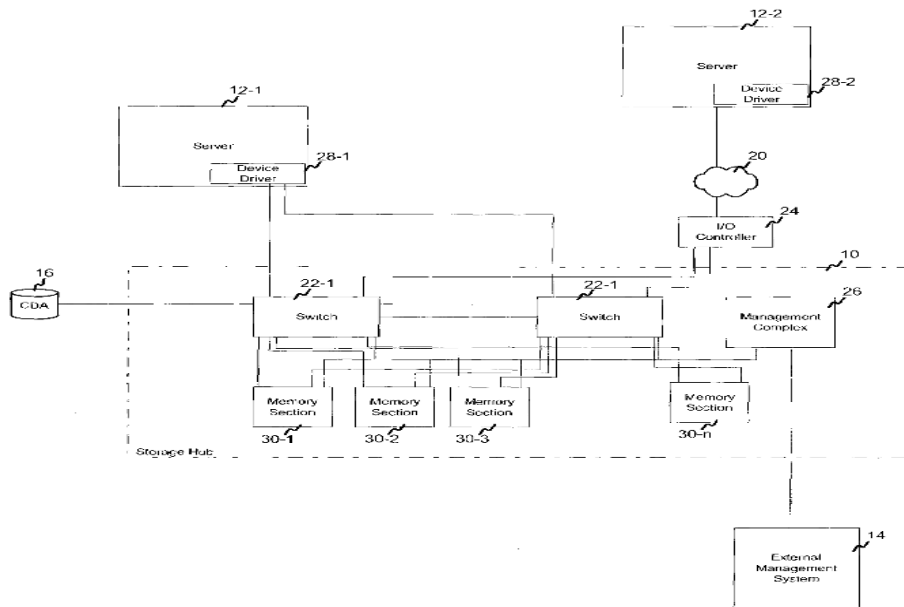


Figure 2

In addition, the patentees specifically label components as “external,” such as 14: “external management system.” Patentees chose to specifically label certain components “external” so it follows that other components are not necessarily “external,” to other components. This distinction carries through to the claims, which specifically require certain elements to be “external.” *See, e.g.*, ‘662 Patent claim 1 (“... interconnecting the memory sections and the *external* device interfaces...”); ‘388 Patent claim 10 (“The storage system of claim 8 further including an interface that connects the management system to an *external* management system....”). The express claim language that requires certain elements be “external” to others should be given meaning and distinguished from instances in which that

language is not used. *See Merck & Co. v. Teva Pharm. USA Inc.*, 395 F.3d 1364, 1373 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”). The logical result is that “switches” or any other element of the invention not labeled an “external” need not be “external” from another element.

Furthermore, Defendants’ selectively quoted passages from the specification are related to preferred embodiments. The law is settled that a preferred embodiment does not limit the claims. *See Phillips*, 415 F.3d at 1323 (“[W]e have repeatedly warned against confining the claims to [] embodiments.”). The patent specifically points one of skill in the art to the claims to determine the scope of the invention. (‘662 Patent at 2:33-40.) This is not a situation where the term or its particular use is confusing. The specification makes clear that the type of switch used is not a limiting feature of the inventions. Therefore, the Court should reject Defendants’ proposed construction, which improperly obviates and contradicts the claim language.

Nor should the Court accept Defendants’ invitation to make a blanket ruling on what features a switch must include, when the claims themselves set forth these requirements. For example, ‘177 Patent claim 1 requires “one or more switches, including: one or more interfaces...; a switch controller ...; and a selectively configurable switch fabric...” Yet ‘177 claim 13 does not require a switch fabric. Defendants are improperly attempting to carry over express limitations from one claim to other claims that omit the limitation. *See nCube Corp. v. SeaChange Int’l*, 436 F.3d 1317, 1322 (Fed. Cir. 2006) (“This Court need not interpret what the patentee meant by ‘upstream manager’ in this claim by importing the limitation from [another claim] into this term.”).

Defendants’ Sur-Reply Position on Term 4:

PI does not dispute that the claimed switch is responsible for directing data between memory sections and external devices, nor does PI dispute that the switch must be a physical device having certain components, including “one or more interfaces.” PI also does not dispute that the claims recite the “switches,” the “memory sections” and the “management system” as separate elements. These aspects of Defendants’ construction are therefore undisputed.

A. Systems containing software are not exempt from claim drafting rules.

Contrary to PI's unsupported arguments, the Federal Circuit's holding in *Becton* (holding that separately reciting elements implies that those elements are distinct components of the patented invention) applies equally to systems that contain software. Although *Becton* deals with mechanical needle housings, its holding is not limited to physical devices. *Becton*, 616 F.3d at 1254. Even if *Becton* were limited to physical structures, PI acknowledges that the claims at issue involve "the passing of data *in hardware systems* using software algorithms." (PI Term 7 Reply.) PI does not argue that hardware systems at issue in this patent do not involve physical structures.

PI's attempt to distinguish *L-3 Commc'ns Corp.* is also meritless, as discussed below in connection with "management system." *L-3* is directly on point.

B. PI mischaracterizes FIG. 2 and the disclosed embodiments.

PI argues that FIG. 2 "depicts switches together with the memory section and management system in the same functional block of an exemplary storage hub" (PI Term 4 Reply), but ignores the fact that the described "storage hub" corresponds to the entirety of the "storage system" recited in each claim. Defendants agree that the switch, management system and memory sections are all part of the storage hub/system. The issue here is whether these components are separate and distinct from one another *within* the storage hub. The specification makes plain that FIG. 2 (and every disclosed embodiment) shows that the three primary components of the storage system are separate and distinct from one another.

PI argues that because some elements are claimed to be "external," elements that do not have an "external" limitation need not be separated from other elements. (PI Term 4 Reply.) PI mischaracterizes Defendants' position. The switch, management system and memory sections must all be distinct from one another. That is what "external" means. Defendants' construction does not conflate any distinction between the claimed "external management system" and the claimed "management system." As the parties agree, the "external management system" must be

“external to [the] storage system.” *See* JCC, Ex. A at 3. But **any** management system must be “external to,” *i.e.*, distinct from, the memory section and switch.

Finally, PI implies that Defendants’ construction is limited to the “preferred” embodiments. (PI Term 4 Reply.) This distinction is unavailing given that **every** embodiment in the specification shows the three components as separate and distinct from one another. The consistent teaching among all the embodiments in the specification compels Defendants’ proposed construction. *Microsoft Corp.*, 357 F.3d 1340, 1348. Similarly, PI ignores the evidence presented by Defendants above that, in every embodiment and every structural description of the switch in the claims, the patent explicitly defines “switch” as including a “switch fabric.” PI fails to identify a contrary embodiment within the intrinsic record.

5) “switch controller”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|---|----------------------------|---|
| ’177 Patent: claims 1, 4, 13; ’388 Patent: claims 1, 2, 5, 8, 12, 14, 16. | Plain and ordinary meaning | physical component within the switch and separate from the switch fabric, which controls the switch |

Plaintiff’s Opening Position on Term 5:

The term “switch controller” should be construed according to its plain and ordinary meaning. The switch controller, as its name states, controls the switch. No other construction is necessary.

The Defendants attempt to narrow this term by adding the limitations that the switch controller be a “physical component within the switch and separate from the switch fabric” which are not supported by the claim language or specification. This claim term appears in Claim 1 of the ’177 patent, among others, which provides for “a switch controller that executes software, including a routing algorithm.” The language of the claim does not limit the switch controller other than by its function, which is to execute an algorithm. The specification also discloses the switch controller broadly. While in one embodiment “the switch 22 may include one or more switch controllers (not shown) for executing this software to control the switch 22,”

in other embodiments “the switch controller 202 and memory section interfaces 208 need not be included in the switch 22, and the management complex 26 of the storage hub 10 exercises direct control over the switch fabric 206 and server interfaces 204.” ‘177 Patent, 13:53-57 (emphasis added). Defendants’ proposed construction would thus improperly exclude one of the embodiments of the ‘177 Patent.

Accordingly, Defendants’ proposed construction should be rejected, and this term should be construed according to plain and ordinary meaning.

Defendants Answering Position on Term 5:

Again, the plain language of the claim requires that the switch controller be part of the switch but separate and distinct from the switch fabric. *Becton*, 616 F.3d at 1254. For example, claim 1 of the ‘177 Patent recites “one or more switches, **including**: ... a switch controller that executes software, including a routing algorithm; and a selectively configurable switch fabric” ‘177 patent at 28:48-57. The language of the claim therefore limits the claimed “switch controller” both functionally and structurally—*i.e.*, what it must be capable of doing **and** where within the storage system it is located.

PI’s citation to certain inapplicable embodiments in support of its construction mischaracterizes the teaching of the Patents-in-Suit. Specifically, FIG. 6 of the patent discloses the claimed embodiment wherein the switch includes a switch controller. However, FIG. 7 discloses an alternate embodiment wherein the switch does not have a switch controller. *Id.* at 50-57. Instead, “the management complex 26 of the storage hub 10 exercises direct control over the switch fabric 206 and server interfaces 204.” *Id.* FIGS. 6 and 7 thus disclose two embodiments, one having a distinct switch controller and the other not. The claims that recite a distinct switch controller must refer **only** to the embodiment of FIG. 6.

Moreover, PI admits that the term must be limited by its function, *i.e.*, to execute an algorithm. The independent claims of the ‘177 Patent require that the switch controller “execute software.” *See, e.g.*, ‘177 Patent at 28:51. A dependent claim requires that the switch controller be provided a “software image.” *Id.* at 30:11-15. These limitations only make sense if the switch

controller includes, at least, a processor or other physical component that can receive, load, and execute a “software image.”

Plaintiff’s Reply Position on Term 5:

Defendants again refuse to let the claims speak for themselves and attempt to load additional limitations on a term defined by the surrounding claim language. Defendants’ proposed construction improperly excludes embodiments in the specification where a switch does not contain a switch controller. Defendants again attempt to invoke *Becton* to justify excluding a disclosed embodiment, but they do not identify any “textual hook” as required by the *NTP* case explained above. Particularly, Defendants point to no language in Claim 1 of the ‘177 patent, on which it relies, that requires the switch controller to be “separate and distinct from the switch fabric.” Claim 1 of the ‘177 patent requires only that the switch include “a switch controller...” and “a selectively configurable switch fabric....” The Claim does not require, explicitly or implicitly, the two to be “separate and distinct,” and nothing in the intrinsic disclaims the disclosed embodiments. Accordingly, the Court should reject Defendants’ argument.

Defendants’ Sur-Reply Position on Term 5:

PI argues that nothing in the claims requires construing the switch controller as distinct from the switch fabric. This ignores the plain language of the claim which separately enumerates the switch controller as a component of the switch. *See, e.g.*, ‘177 patent, claim 1 at 28:48-57. The patent would be nonsensical if the same element could comprise both the switch controller and the switch fabric. *See, e.g.* ‘662 patent at 13:59-60 (“... provide the switch controller 202 with an algorithm for switching traffic *through* the switch fabric 206.”)

6) “switch fabric”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|---|---|---|
| ’177 Patent: Claims 1, 2, 3, 6, 7; ’388 Patent: Claims 1, 8; | Plain and ordinary meaning or alternatively, the physical interconnection | the physical interconnection architecture within a switch that directs data from an incoming interface to an outgoing interface |

| | | |
|--|--|--|
| '662 Patent: Claims 1, 4, 5, 6, 12, 13 | architecture that directs data from an incoming interface to an outgoing interface | |
|--|--|--|

Plaintiff's Opening Position on Term 6:

The term “switch fabric” should be construed according to its plain and ordinary meaning. The term “fabric” means “underlying structure.” (www.merriam-webster.com). The term needs no construction as a jury can clearly understand that the term “switch fabric” relates to the structure or fabric of the switch.

If the Court does not adopt the plain and ordinary meaning the term, then the Court should adopt the explicit definition of “switch fabric” as defined in the specification:

As used herein, the term "switch fabric" the physical interconnection architecture that directs data from an incoming interface to an outgoing interface.

'662 Patent, 6:6-8. As the Court is aware, where the inventor provides an explicit definition of a term “the inventor's lexicography governs. . . [because] the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive.” *Phillips*, 415 F.3d at 1313. The Defendants seek to unduly narrow this definition provided in the specification by adding the phrase “within a switch.” There is no support for narrowing the definition provided in the specification, claim language, or otherwise. The Court should refrain from deviating from the explicit definition set forth in the Patents-in-Suit.

Defendants Answering Position on Term 6:

The difference between the parties' constructions is that Defendants include the phrase “within a switch” in their proposed construction. Every claim requires that the switch fabric be part of the switch. For example, claim 1 of the '177 Patent recites “one or more switches, **including**: one or more interfaces for connecting to one or more external devices; a switch controller that executes software, including a routing algorithm; and a selectively configurable switch fabric connected to one or more memory sections and the one or more interface and interconnecting the memory sections and the one or more interfaces based on the routing algorithm stored in the switch controller.” '177 Patent at 28:48-57. The specification also makes

this clear. *See, e.g., id.*, Summary at 2:21-26 (“The one or more switches **include** one or more interfaces for connecting to one or more external devices, **and a switch fabric . . .**”).

Defendants’ construction is necessary if PI disputes whether a switch fabric is necessarily a component of the switch. However, PI has already expressly admitted that “a jury can clearly understand that the term ‘switch fabric’ relates to the structure or fabric **of the switch.**” (PI Term 6 Op.) Given this, it is unclear why PI continues to dispute whether the switch fabric must be within the switch.

In light of the plain claim language, the specification and PI’s own statements, the Court should adopt Defendants’ proposed construction.

Plaintiff’s Reply Position on Term 6:

This term is expressly defined in the specification as: “the physical interconnection architecture that directs data from an incoming interface to an outgoing interface.” ‘662 Patent at 6:6-8. Defendants provide no legal basis to contest this definition because there is none. If the claims put further limitations on the term “switch fabric,” that would come to bear through the claims themselves and need not be added redundantly. The Court should reject Defendants’ argument and adopt the definition contained in the specifications.

Defendants’ Sur-Reply Position on Term 6:

PI does not directly dispute Defendants’ proposed construction, but instead argues that if the claims require limiting the term, “that would come to bear through the claims themselves.” Indeed, the plain language of the claims compels Defendants’ construction. *See Phillips*, 415 F.3d at 1314 (noting that the “claims themselves” are an important source of claim construction evidence). Notwithstanding the plain claim language, the parties dispute whether the claims require the “switch fabric” to be a component of the switch. PI seems content not to dispute Defendants’ evidence, and instead simply ask that the dispute lie until some future date. Defendants respectfully ask the Court to construe the term and settle this dispute. *See O2 Micro*, 521 F.3d at 1362 (“When the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.”).

7) “management system”

| Claim Terms | Parallel Iron’s Position | Defendants’ Position |
|--|--|--|
| ’177 Patent, claims 1, 3, 4, 11, 13, 14, 18. | Plain and ordinary meaning, or alternatively, system for reading or writing data, which is used for configuration management | system external to switches and memory sections for controlling operations of one or more switches and one or more memory sections |

Plaintiff’s Opening Position on Term 7:

The term “management system” should be construed according to its plain and ordinary meaning. First, each of the terms “management” and “system” are well defined (www.merriam-webster.com). Second, the claims themselves specify what the management system does. For example, claim 1 of the ’177 Patent states that the “management system capable of receiving fault messages from the memory section controllers and inactivating the memory section corresponding to the fault message received by changing the routing algorithm, and wherein the management system is further capable of determining and changing the routing algorithm for use by the selectively configurable switch fabric in interconnecting the memory sections and the one or more interfaces, providing the determined routing algorithm to the switch controller, and instructing the switch controller to execute the determined routing algorithm.” The function of the management system is defined by the language of the claims. The term “management system” by itself should not be limited to a particular function (including “for controlling operations of one or more switches and one or more memory sections” as proposed by the Defendants) other than those defined by the claim.

In the alternative, if the Court finds that a construction is necessary, the Court should construe the claim as a “system for reading or writing data, which is used for configuration management” rather than the Defendants’ construction which requires the management system to control the “operation of one or more switches.” The abstract discloses a management system in broad terms. For example the abstract states that “[a]dditionally, the management system **may** determine routing algorithms for the one or more switches.” ’177 patent, Abstract (emphasis

added). By using the term “may,” the Patents-in-Suit disclose a broad management system that may (not must) control the switch. For this reason, Defendants’ proposed construction should be rejected, and the claim term should likewise be construed similarly to the proposed construction of external management system above, as a “system for reading or writing data, which is used for configuration management.”

The Defendants further seek to erroneously narrow this claim term by adding the limitation of “system external to switches and memory sections.” However, the plain language of the claim term does not use the phrase “external.” When the Patentee sought to limit the management system to an “external management system,” the Patentee did so in claim 4 of the ‘662 Patent, and claims 3 and 10 of the ‘388 patent.¹⁷ Additionally, the Patent uses the terms “management system” and “external management system” in the same claim (*See e.g.* ‘388 Patent, Claim 10), creating the presumption that the claim term “management system” is used differently than “external management system.” By using different terminologies, the patentee is presumed to have intended two different meanings. *See e.g., Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1349 (Fed. Cir. 2012) (“The fact that the two adjacent claims use different terms in parallel settings supports the district court’s conclusion that the two terms were not meant to have the same meaning”); *Tandon Corp. v. U.S. Intern. Trade Comm’n.*, 831 F.2d 1017, 1023 (Fed. Cir. 1987) (“There is presumed to be a difference in meaning and scope when different words or phrases are used.”). Furthermore, the Patentee also uses the term “management system” in some portions of the specification without referring to an “external management system.” ‘177 patent, Abstract, 2:11-43. Therefore, the claim term should be afforded its plain and ordinary meaning, and not be limited by the limitation of “external,” or, in the alternative, construed pursuant to Parallel Iron’s alternative construction.

¹⁷ In the event the court seeks to limit this claim term to an external system, the Court should adopt PI’s construction for claim term 1.

Defendants' Answering Position on Term 7:

PI's proposed construction of "management system" differs from Defendants' in two respects: (1) PI's construction does not require the claimed management system to be external to the claimed switches and memory sections; and (2) PI's construction defines the management system as "used for configuration management," instead of "for controlling operations of one or more switches and one or more memory sections." Defendants' construction is mandated by the intrinsic evidence, and should be adopted.

A. The intrinsic evidence requires that the management system be external to the claimed switches and memory sections.

The claimed storage system consists of three components that, per the specification, must be distinct and external to one another: (1) one or more memory sections; (2) one or more switches; and (3) a management system. The asserted claims consistently list each of these elements separately, clearly implying that these elements are "distinct components of the patented invention." *Becton*, 616 F.3d at 1254 (quotations omitted). PI argues that Defendants' construction that the "management system" be external to the switches and memory sections improperly imports limitations from the specification. Specifically, PI argues that "[w]hen the Patentee sought to limit the management system to an 'external management system,' the Patentee did so." (PI Term 7 Op.)

PI, however, is conflating two different uses of the term "external." Defendants do not dispute that the patent discloses both a "management system" and an "external management system." As set forth in the specification, an "external management system" is **external to the storage hub**. See FIGS. 1, 2 (illustrating external management system as external to storage hub 10); '662 Patent, 4:31-50. Defendants are not arguing that the term "management system" means that it is external to the storage hub; rather, Defendants assert that the "management system" disclosed in the claims (which again Defendants agree is different from the external management system) is **external to the switches and memory sections**.

Defendants' definition is supported by the intrinsic evidence. For example, the claims require that the management system be:

capable of receiving fault messages **from** the memory section controllers and removing from service the memory section from which the fault message was received, and wherein the management system is further capable of determining an algorithm **for use by** a switch fabric in interconnecting the memory sections and the external device interfaces, and **instructing the switch** to execute the determined algorithm.

See, e.g., '662 Patent, claim 1. Functional language requiring that information be passed **from** one component **to** another necessitates construing those components as distinct from one another. *L-3 Commc'ns Corp.*, 2012 WL 2412158, at *3 (finding two elements to be distinct components when claims recited that electric charge moved “from” one to the other). Likewise, the claim language reciting functional language like “for use by,” “instructing,” and “interconnecting,” necessarily implies that each of the respective components are distinct from one another. And as described above, the specification makes absolutely clear that the management system is external to the switches and memory sections. Thus, Defendants’ construction is consistent with the disclosures relating to the external management system, and comports with the intrinsic evidence relating to the claimed management system.

B. Per the intrinsic evidence, the claimed management system is “for controlling operations of one or more switches and one or more memory sections.”

Contrary to the position PI took in the Joint Claim Construction Chart, PI now asserts that the “management system” is used for “configuration management” rather than “for controlling operations of one or more switches and one or more memory sections.” JCC, Ex. A at 4. PI’s original position was correct.

Every independent claim of the asserted patents disclosing a management system recites that the management system controls operations of one or more switches and one or more memory sections. *See* '662 Patent, Claims 1, 4-6, 12-14, 17, 19-21; '177 Patent, Claims 1, 13; '388 Patent, Claims 1, 8, 14 (reciting that management system is capable of removing from service or inactivating the memory section or memory device within the memory section); '388 Patent, Claim 2 (reciting that management system determines a new routing algorithm to redirect data for a memory device within the memory section); '662 Patent, Claims 1, 4-6, 12-14, 17, 19-21; '177 Patent, Claims 1, 13; '388 Patent, Claims 1, 2, 8, 14 (reciting that management

system is capable of determining or changing the algorithm/routing algorithm for use by the switch, switch fabric, or switch controller, and/or providing or instructing the switch or switch controller to execute the algorithm/routing algorithm).

As described above, the Summary Section also states that the management system is for controlling operations of one or more switches and memory sections: “A management system is provided capable of . . . **removing from service the memory section from which the fault message was received**, and wherein the management system is further capable of determining an algorithm . . . and **instructing the switch to execute the determined algorithm.**” ’662 Patent, 2:24-32.

In accordance with the intrinsic evidence, the claimed management system is “for controlling operations of one or more switches and one or more memory sections.”

Plaintiff’s Reply Position on Term 7:

Defendants are burdening the Court by asking it to construe a term that is thoroughly explained in the claims themselves. For example, claim 1 of the ’177 patent explains that the “management system” is:

“capable of receiving fault messages from the memory section controllers and inactivating the memory section corresponding to the fault messages received by changing the routing algorithm, and wherein the management system is further capable of determining and changing the routing algorithm for use by the selectively configurable switch fabric in interconnecting the memory sections and the one or more interfaces, providing the determined routing algorithm to the switch controller, and instructing the switch controller to execute the determined routing algorithm.”

Defendants take the erroneous position that the Court should place even more limitations on the “management system” than what the claims themselves provide. The patentees, in the specification, directs one of skill in the art to the claims to determine the scope of the invention, in accordance with Federal Circuit law. (See ’662 Spec. at 2:33-34: “The summary and the following detailed description should not restrict the scope of the claimed invention.” See also *Phillips*, 415 F.3d. at 1312 (“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent

define the invention”)). The Court should ignore Defendants’ litigation-driven rhetoric and allow the claims speak for themselves where, as here, they clearly describe the claim term.

A. The intrinsic evidence allows the management system to be housed with switches and memory sections.

The additional limitations that Defendants seek to import are nowhere in the specification. The specification does not require the “management system” to be “external to switches and memory sections....” The language Defendants quote from the claims does not support their vague proposal. For example, claim 1 of the ‘662 Patent requires only that the memory be “capable of ... receiving fault messages from the memory section controllers ... and instructing the switch....” Nowhere does claim 1 of the ‘662 Patent, nor any other claim of the patents-in-suit require the memory section controller to be external to anything.

Defendants’ proposal that the function of the defined “management system” be limited is logical fallacy. Just because some claims require certain functions of a management system does not mean that the management system’s function for all claims of all patents are so limited. If Defendants are correct that “every independent claim of the asserted patents disclosing a management system recites that the management system controls operations of one or more switches and one or more memory sections,” then there is no need to duplicate this claim language in a construction.

B. Federal Circuit case law requires a “textual hook” in the claims to impose physical limitations on terms.

Defendants citations to *Becton, Dickinson v. Tyco Healthcare*, 616 F.3d 1249 (Fed. Cir. 2010), do not support their arguments. In *Becton*, the claims, which related to a mechanical needle housing (and not a computer system as here), required that a “spring means” be “connected to” a hinged arm, and plaintiff argued that the spring need not be attached to the arm. The court ruled that one element logically could not be “connected to” itself physically, so they must be separate for the claims to make sense. Essentially, plaintiff’s construction rendered the claims nonsensical. Here, there is no such requirement that components be physically distinct from one another, and the claims make sense without such an added restriction. Indeed, the

claimed invention includes computer software, the nature of which does not typically use physical distinctions. For example, software can transfer data from one system to another even if the actual systems are located in the same place.

The claims and technology in this case are more like those in *NTP, Inc. v. Research in Motion*, 428 F.3d 1282 (Fed. Cir. 2005), where the Federal Circuit ruled that a “RF receiver” and “mobile processor” need not be “physically disposed in separate housings.” *Id.* at 1310. The Court ruled that claim terms require a “textual hook” in the claim language for a limitation requiring physical separation of components to be imposed. Despite the fact that the claims of the asserted patents in that case required the RF Receiver and mobile processor be “connected” and “transfer data” between one another, the court affirmed the district court construction that the two features need not be physically separate:

Although "connected" more strongly connotes a physical link between the mobile processor and the wireless receiver than does the term "transfer," it still does not require that the mobile processor and wireless receiver be physically disposed in separate housings. A "connection" can occur between these two devices regardless of whether they are housed separately or together. Indeed, the two components could be connected, joined, or linked together by wires or other electrical conductors and still be located in the same housing or even on the same circuit board. Because the claim language does not support RIM's interpretation, we agree with the district court and decline to impose this additional restriction on the claims.

Id. at 1310-1311 (Fed. Cir. 2005). *See also Powell v. Home Depot U.S.A., Inc.*, 663 F.3d 1221 (Fed. Cir. 2011) (“[In *Becton*], the claim language did not suggest that the hinged arm and the spring means could be the same structure.”) (internal quotes omitted); *Retractable Techs., Inc. v. Becton Dickinson*, 653 F.3d 1296, 1303 (Fed. Cir. 2011) (Federal Circuit rejects argument that “elements must be separate pieces because the asserted claims list [the elements] as separate claim limitations and the specification only describes a retainer member that is a separate part from the needle holder.”).

The *L-3 Communications Corp.*, decision cited by Defendants also deals with a different technology and set of claims. In that case, this Court ruled that a method claim which requires providing, passing and storing an electric charge between two elements requires that the two

elements be separate and distinct. This Court relied on a claim of a related divisional application that required a third element placed between two elements to help determine that the elements were separate. The claims in *L-3 Communications* are not comparable to the claims in this case. The technology in *L-3 Communications* relate to a method of passing electric charges - a technology much different than the passing of data in hardware systems using software algorithms as here.

Defendants' Sur-Reply Position on Term 7:

PI recognizes the importance of the claims in construing the disputed terms, but then completely ignores that the claims in this case necessitate Defendants' proposed construction. As explained throughout Defendants' briefing, the claims and specifications here all disclose the management system as separate from the switches and memory sections. PI ignores this.

Instead, PI argues that *Becton* is distinguishable because there "one element could not logically be 'connected to' itself physically, so they must be separate for the claims to make sense." But the same situation applies with full force here—the management system cannot receive fault messages *from itself*, and then *instruct itself* to execute a determined algorithm. Such a construction would not make sense. The claims and specification clearly require that the management system receive from the separate memory section and instruct the separate switch. *Becton* fully applies.

Next, PI argues that "the claims and technology in this case are more like those in *NTP*." As PI recognizes, the *NTP* court focused on whether the elements at issue could be "physically disposed in separate housings." 428 F.3d at 1310. Defendants recognize that the management system, switches, and memory sections may all be housed within the "storage hub" of the invention. However, they still must be *distinct components*—i.e., external to *one another*. Nothing in *NTP* changes that result.

PI is wrong that this Court's decision in *L-3 Commc'ns Corp.* is distinguishable because it purportedly "deals with different" technology. The decision's underlying premise—language requiring that information be passed *from* one component *to* another component suggests that

each component is distinct from the other—is not technology-specific. *L-3 Commc'ns. Corp.*, 2012 WL 2412158 at *3. The Court in *L-3* construed the term “charge storage element” to be “separate and distinct from the photoresponsive element” based on the exact reasoning applied by Defendants in this case. Specifically, in *L-3*, the claims listed the two terms separately and recited that the “charge storage element” received a charge “*from*” the photoresponsive element. *Id.* Contrary to PI’s assertion, the court did not “rel[y] on a claim of a related divisional patent” to reach its conclusion. The Court found its construction to be supported by “[a] natural reading of the plain language of the claims.” *L-3* is directly on point.

Finally, PI does not address the evidence cited by Defendants showing that the management system is for “controlling operations of one or more switches and one or more memory sections.” PI merely states that there is no need to decide this issue on claim construction. Again, PI disregards its own admonition that the claims provide substantial guidance as to the proper construction of claim terms. Here, as explained above, the claims (and specification) support this aspect of Defendants’ proposed construction.

8) “memory device”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|---|----------------------------|----------------------|
| ’662 Patent, claims 1, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21; ’388 Patent, claims 1, 2, 4, 5, 6, 8, 11, 13-17; ’177 Patent, claims 1, 5, 12, 13, 17. | Plain and ordinary meaning | Random access memory |

Plaintiff’s Opening Position on Term 8:

“Memory device” should be given its plain and ordinary meaning. Defendants’ proposed construction of “random access memory” is unnecessarily narrow and would improperly exclude a preferred embodiment. *See Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1377 (Fed. Cir. 2005)

(“[A] construction that would not read on the preferred embodiment would rarely if ever be correct and would require highly persuasive evidentiary support.” (internal quotations and alterations omitted)). The specification defines “memory devices” as “***any type of memory devices***” including not only many types of random access memory (dynamic, synchronous, Rambus, magnetic, resistance, etc.) but also “single in-line memory modules (SIMM), dual in-line memory modules (DIMMs), rambus in-line memory modules (RIMMs), rotating media, etc.” ‘388 Patent at 10:63-11:10. Defendants’ construction ignores all of these alternative forms of memory devices, including basic “rotating media” such as hard drives. Accordingly, Defendants’ construction should be rejected, and the Court should limit the claim to its plain meaning.

Defendants Answering Position on Term 8:

Defendants’ construction of the term “memory device” is consistent with both the intrinsic evidence and the understanding of persons of ordinary skill in the art at the time of the invention. The Patents-in-Suit draw a sharp distinction between a “**memory device**,” which allows for the quick reading and writing of data, *i.e.*, random access memory (RAM), and a “**storage device**,” which is a slower, disk-based device like a hard drive. PI’s attempt to blur this distinction is untenable.¹⁸

The claims themselves explicitly distinguish between a “memory device” for storing **primary** data, and a “non-volatile storage device” that stores **secondary, back-up** versions of the same data. *See, e.g.*, ’662 Patent, Claim 2 (“[I]nstructing the storage system to store a back-up of data stored by one or more of the memory sections into the non-volatile storage device.”) and Claim 3 (in the event of a “fault,” instructing the “non-volatile storage device to load the

¹⁸ Random-access memory is computer memory that is intended for short-term, temporary storage; it is quick to read from and write to, but cannot store large amounts of data. It also cannot store data if the power is turned off; it is “volatile.” Longer-term storage, such as hard drives, requires more time to access but has greater capacity. Furthermore, hard drives are “nonvolatile” devices because they retain their data even when switched off. It is common to refer to a computer’s RAM as its “memory,” while longer-term storage is typically referred to as a “disk” or as a “hard drive.” *See* Jestice Decl., ¶¶ 24, 25, 29, 30.

back-up of the faulty memory section's data into a functioning memory section"); *see also* '662 Patent, Claims 5, 10, and 14-16; '388 Patent, Claims 4, 9, and 15.

As a fundamental rule of claim construction, "memory device" and "non-volatile storage device" should be afforded different meanings. *See Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (stating that in the absence of any evidence to the contrary, "the use of two terms in a claim requires that they connote different meanings"). A "non-volatile storage device" is explicitly defined as a "magnetic storage device, such as a CDA [cached disk array]." '662 Patent, 3:38-42. A "memory device" therefore cannot also be a "magnetic storage device," like a hard drive, or else there would be no need to use a different term in the claims.

The specifications establish that the only meaning for the term "memory device" is RAM. Each diagram describing the invention in the patents shows the use of DIMM circuits (which are RAM) as "memory devices." *See, e.g.*, '662 Patent, FIGS. 5-7, 11, 15, and 16; Jestice Decl. ¶ 22. Also, all but one of the numerous examples of "memory devices" described in the patents are RAM. *See, e.g.*, '662 Patent, 11:12-21 ("dynamic random access memory (DRAMs), synchronous dynamic random access memory (SDRAMs), Rambus DRAMs (RDRAMs), magnetic random access memory, resistance random access memory, ferroelectric random access memory, polymer random access memory, chalcogenide random access memory . . .").¹⁹

The only exception in the list of examples of "memory devices" is "rotating media," and that example is incontrovertibly inconsistent with the use of the term "memory device" in the

¹⁹ PI concedes that the specification defines "memory devices" as "including many types of random access memory," but contends that the specification also includes other types of memory, such as "single in-line memory modules (SIMM), dual in-line memory modules (DIMMs), rambus in-line memory modules (RIMMs), rotating media, etc." (PI Term 5 Op. (citing '388 Patent, 10:63-11:10).) This is misguided. DIMMs, SIMMs, and RIMMs are RAM devices. *See* Jestice Decl., ¶¶ 23-24; Microsoft Computer Dictionary 161 (5th ed. 2002) (DIMM: "A type of memory board comprised of RAM chips mounted on a circuit board, similar to the more commonly used SIMM[.]"); *id.* at 454 (RIMM: "A plug-in module jointly developed by Rambus and Intel for the high-bandwidth computer memory known as Direct RDRAM [Rambus dynamic random access memory].").

claims (as described above), the remainder of the specification, and the very crux of the supposed invention. As described in the specification, the stated goal is to address the sluggishness of prior art storage systems. According to the Patents-in-Suit, the existing “high-end storage system devices with rotating media, such as CDAs [cached disk arrays], include **less than ideally desirable characteristics** in terms of total throughput and memory cache size.” *Id.* 1:54-57. To “address the problems of the prior art,” *id.* 2:9-10, the claimed invention purports to use “memory devices” for primary data storage, and “non-volatile storage devices” only for back-up storage. *See, e.g.*, ’662 Patent, Claims 1-3, 5, 10, and 14-16; ’388 Patent, Claims 4, 9, and 15; ’177 Patent, Claim 1. It would be antithetical to the entire premise of the claimed invention to use “rotating media, such as CDAs” as primary memory, especially when CDAs are disparaged in the “Background” section of the patents as being too slow (*i.e.*, having inadequate “throughput” characteristics). *See Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1332-33 (Fed. Cir. 2009) (upholding construction of “graft” to require “malleable” wires and finding that inventors disclaimed “resilient” wires because “inventors disparaged prior art resilient wires in their ‘background art’ section of the specification.”); *Spectrum Int’l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378 (Fed. Cir. 1998) (narrowing claim term’s ordinary meaning based on intrinsic evidence distinguishing claimed invention from prior art). Accordingly, a “memory device” must mean RAM in light of the intrinsic evidence.

Defendants’ construction is also supported by the extrinsic evidence. *See, e.g.*, Jestice Decl., ¶ 31. Likewise, the Microsoft Computer Dictionary stated at the time of the invention that, “[w]hen a distinction is made between **primary** (main) storage devices and **secondary** (auxiliary) storage devices, **the former refers to random access memory (RAM)** and **the latter refers to disk drives** and other external devices.” Microsoft Computer Dictionary, at 499 (defining “storage device”).

PI’s suggestion that “memory device” needs no construction because the specification provides that a “memory device” can refer to “any type of memory device[],” misses the point of the alleged invention entirely. The circular definition of “memory device” as “any type of

memory device” provides absolutely no clarity to the jury as to the meaning of the term. *See O2 Micro Int’l Ltd.*, 521 F.3d at 1362. PI’s proposal is also inconsistent with the limited range of options given for memory elsewhere in the specification, as outlined above.

Plaintiff’s Reply Position on Term 8:

Defendants fail to demonstrate that “memory device” has the very limited meaning of “random access memory” (“RAM”). Defendants’ textual argument seems to be that because the claims sometimes refer to “non-volatile memory,” one of skill in the art would read “memory device” to mean only RAM, which is purportedly only volatile. Defendants rely on extrinsic evidence, including paragraphs from a declaration by an undisclosed paid expert as well as a hand-picked dictionary definition to support its conjecture that one of skill in the art would read “memory device” to mean only RAM. As explained in PI’s Opening Position, this construction would exclude an embodiment in the specification and has no textual support in the claims or the specification. The specifications make clear that the term “memory device” does not have a limited meaning, except as limited in the claims. *See* ‘662 Patent 11:12-13 (“The memory devices 66 may be *any type* of memory devices”).

Defendants rely on a statement in the specifications mentioning that CDAs (“Cached Disk Arrays”) “include less than ideally desirable characteristics in terms of total throughput and memory cache size,” but this statement does not support Defendants’ limited proposed construction. It does not follow that a patentee identifying a problem with one prior art technology limits an entire class of storage media. As noted above, the specifications clearly provide for “*any*” type of memory device, and it would be improper to limit the language in the claims based on this one stray reference.

The jury does not need further clarification of what the term “memory device” means. “Memory” and “device” are commonly understood terms and the claims themselves limit the terms. Defendants’ argument to construe “memory device” as “RAM” will not help the jury as it substitutes technical jargon for plain language, and in any event, Defendants’ construction would erroneously limit the claim term.

THIS PAGE CONTAINS INFORMATION DESIGNATED**"CONFIDENTIAL- ATTORNEY'S EYES ONLY"****Defendants' Sur-Reply Position on Term 8:**

PI fails to rebut the intrinsic and extrinsic evidence Defendants cited in support of their construction. Instead, PI recycles the same position advanced in its opening brief--that the specification recites that "memory devices" can be "any type of memory device." This circular statement does not help a juror understand what a "memory device" is. The patents themselves expressly establish that "any type of memory device" means any of the various types of random access memory (RAM) disclosed in the specification. *See, e.g.*, '662 Patent, FIGS. 5-7, 11, 15, and 16; '662 Patent, 11:12-21.

Consistent with that intrinsic evidence, Defendants' expert also opined that a person of ordinary skill at the time of the invention would understand the term "memory devices," as used in the patents, to mean RAM. Jestice Decl., ¶ 31.²⁰ PI did not attempt to rebut this evidence, or the definitions from the Microsoft Computer Dictionary cited by Defendants, which are from the time of the alleged invention and reflect the common knowledge in the art that "memory" meant RAM, while "storage" meant a disk drive.

Moreover, evidence PI produced *after* Defendants submitted their opposition brief also shows that the claimed "memory devices" cannot mean "rotating media" such as disk drives. At the time of the alleged invention, PI's predecessor-in-interest repeatedly and publicly described the alleged invention as *not* relying on rotating media. *See, e.g.*, Ex. A at PI008828-29, Ex. B at PI008887, and Ex. C at PI009545. PI's predecessor even disclosed to potential investors in March 2003 that

and has

²⁰ PI's request that the Court strike the Jestice Declaration is baseless. Defendants served the Jestice Declaration with their Answering claim construction brief in accordance with the Local Rules and the Scheduling Order for these related cases. Defendants were not required to disclose Mr. Jestice or his opinions before serving that brief. In addition, the fact that PI chose to drop its assertion of the means-plus-function claims against all Defendants after receiving Defendants' Answering brief does not render irrelevant the opinions in the Jestice Declaration, especially not his opinions regarding the term "memory devices," which appears in every asserted claim.

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[REDACTED] Ex. A at PI008828-29. Indeed, PI’s predecessor expressly asserted that the patented invention allegedly offers a [REDACTED]

[REDACTED] Ex.

C at PI009545. Accordingly, PI’s attempt to now recapture disk drive technology by an expansive and unsupportable construction of the term “memory devices” should be rejected.

9) “memory section”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|--|--|
| ’662, claims 1-6, 9, 12, 13, 14, 17-21; | Plain and ordinary meaning | a subsystem including one or more memory devices for storing information, the subsystem acting independent from other subsystems |
| ’388, claims 1, 2, 5, 6, 8, 9, 11, 12, 13, 14, 16, 17; | or alternatively, | |
| ’177 patent, claims 1, 5, 12, 13, 15, 17. | a subsystem including one or more memory devices for storing information | |

Plaintiff’s Opening Position on Term 9:

The term “Memory Section” should be construed according to its plain and ordinary meaning. First, the terms “memory” and “section” are both well-known (www.merriam-webster.com). Second, the claims themselves define the memory section. For example, claim 1 of the ‘177 patent states “one or more memory sections, including: one or more memory devices having storage locations for storing data, and a memory section controller capable of detecting faults in the memory section and transmitting a fault message in response to the detected faults.” This claim language by itself sufficiently defines what a memory section is, making the Defendants’ proposed construction redundant and unnecessary. For example the Defendant proposes that the memory section include “one or more memory devices for storing information.” But this limitation is already stated in claim 1 of the ‘177 Patent. Adopting the Defendants’ construction rather than the plain and ordinary meaning would make the claims overly complicated and repetitive.

If the Court does not adopt the plain and ordinary meaning the term, then the Court should instead adopt the explicit definition of “memory section” provided in the specification, which is consistent with the plain and ordinary meaning:

As used herein, the term "memory section" refers to any subsystem including one or more memory devices that may be used for storing information.

‘662 Patent, 5:11-14. As the Court is aware, where the inventor provides an explicit definition of a term “the inventor's lexicography governs. . . [because] the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive.” *Phillips*, 415 F.3d at 1313. Accordingly, the Court should adopt the construction set forth in the specification, if it decides that an explicit construction is necessary.

The Defendants seek to unduly narrow this definition provided in the specification by adding the phrase “the subsystem acting independent from other subsystems.” There is no support for narrowing the definition in this manner in the specification. Accordingly, the Court should reject Defendants’ improper construction.

Defendants Answering Position on Term 9:

The parties only disagree as to whether the claimed memory section is limited to a subsystem acting independent from other subsystems. Here, Defendants’ construction is dictated by prosecution history disclaimer because the patentee specifically limited the scope of “memory section” during prosecution of the ’177 Patent. *See Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003).

During prosecution of the ’177 Patent, the Examiner rejected proposed claim 1 under § 102(e) as anticipated by a reference which the Examiner read to disclose a switch fabric that interconnects memory sections and external device interfaces based on an algorithm, as recited in claim 1. In response, the patentee distinguished claim 1 by stating that the reference “uses redundancy among memory segments, **requiring them to act in lock-step cooperation with one another instead of acting independently** (as stated at col. 4, lines 65-66) and thus does not allow them to have selectively configurable interconnections to external devices.” JCC, Ex. 1 at

3-4. Thus, the patentee distinguished over the prior art by arguing that the reference's memory segments act in lock-step cooperation, and not independently, and therefore could not have selectively configurable interconnections to external devices as recited in claim 1. *Id.* Accordingly, the patentee clearly and unmistakably limited the scope of the claimed memory sections to subsystems that act independently.

Plaintiff's Reply Position on Term 9:

Despite the fact that this term is explicitly defined in the specification as "any subsystem including one or more memory devices that may be used for storing information," Defendants ask the Court to construe this term otherwise.

Defendants selectively and misleadingly quote the prosecution history of the '177 patent to provide support for their argument for adding limitations to this term. However, the prosecution history refutes Defendants' argument. The reference ("*Ferguson*") before the examiner and at issue included "hardwired, unchangeable" memory sections, which relied on redundancy for fault prevention. *See* JCC Ex. 1 at 3-4. The applicants distinguished the claims by arguing that their claimed memory sections were "selectively configurable." The applicants never argued that the claimed memory sections acted independent of other subsystems. They merely pointed out the fact that the patent-in-suit's memory sections were configurable, while the *Ferguson* reference contained memory sections that were simply redundant, hardwired connections that acted in parallel and were not configurable. The fact that the applicants' memory sections are configurable suggests that they must act with other subsystems and makes Defendants' proposed construction inappropriate in the context of the claims.

For example, in the same response quoted by Defendants, the applicants state "*Ferguson's* control mechanism interprets, 'the independent transitioning of each memory cartridge between various states.' Each memory segment has an associated mechanism in the data controller which is configured to facilitate the power up and power down procedures for each bus segment" JCC Ex. 1, at 3-4 (*quoting Ferguson* Abstract). "In contrast, the management system of claim 1 can 1) receive fault messages from the memory section

controllers, 2) determine the algorithm for use by the selectively configurable switch fabric in **interconnecting the memory sections and the interfaces....**” *Id.* at 5-6 (bold emphasis added).

The Court should ignore Defendants’ misleading argument and adopt the patentees’ definition of “memory section” included in the specifications, as required under basic claim construction principles. *See CCS Fitness v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *Phillips*, 415 F.3d at 1316.

Defendants’ Sur-Reply Position on Term 9:

PI’s reply position, that the “applicants never argued that the claimed memory sections acted independent of other subsystems,” is wrong. During prosecution of the ‘177 Patent, Applicants explicitly distinguished the *Ferguson* reference on the basis that *Ferguson* required its memory sections “to act in lock-step cooperation with one another ***instead of acting independently***, and thus does not allow them to have selectively configurable interconnections to external devices.” JCC, Ex. 1 at 3-4. Thus, Applicants argued that in order to have selectively configurable interconnections to external devices, the claimed memory sections must act independently. PI cannot now ignore that clear disavowal of claim scope.

10) “memory section controller”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|---|---|
| ’662 Patent, claims 1, 4, 5, 6, 9, 12, 13, 14, 17, 18, 19, 20, 21; | Plain and ordinary meaning or alternatively, | A physical device that controls a memory section, and is separate from a memory device, switch, and management system |
| ’388 Patent, claims 1, 8, 14. | a hardware or software component that controls a memory section | |

Plaintiff’s Opening Position on Term 10:

The term “memory section controller,” should be construed according to its plain and ordinary meaning. The Defendants seek to unduly limit this term to a “physical device” which is “separate from a memory device, switch, and management system.” The plain meaning of the term does not require a physical device or that the memory section controller be separate. The

specification does not limit the memory section controller to a physical device and simply states that the “memory section controller [is] capable of detecting faults in the memory section and transmitting a fault message in response to the detected faults.” ‘177 Patent, 2:17-21. Furthermore, it provides that “[t]he [memory] section controller 54 **may, for example, include** a microprocessor 51, internal memory 52, a management complex interface(s) 53, memory device control circuitry 55, communications channel interface (CCI) control circuitry 57, test circuitry 59, timing circuitry 61, and a Header/test interface 63. The microprocessor 51 may be, for example, a chip such as the Motorola G2 executing appropriate software.” ‘662 Patent, 11:27-34. The specification also notes that “[t]he [memory] section controller 54 **may also include** memory device control circuitry 55 for controlling the memory devices 66.” ‘662 Patent, 11:56-58. By using “may, for example, include” and “may also include” when describing the memory section controller, the specification makes it clear that the memory section controller is not limited to a particular physical device. Likewise, the term “physical device or a processor” is not used in the claims when claiming a memory section controller.

For this reason, the Court should reject Defendants’ proposed construction and construe the term according to its plain and ordinary meaning. In the alternative, the Court should construe the claim term without Defendants’ improper limitations as “a hardware or software component that controls a memory section.”

Defendants Answering Position on Term 10:

The parties agree that the claimed “memory section controller” controls a memory section. The intrinsic evidence also makes clear that the memory section controller (1) is a physical device; and (2) is separate from a memory device, switch, and management system. PI’s attempt to broaden the scope of this claim term should therefore be rejected.

A. The memory section controller is a physical device, and excludes the memory section controller from itself constituting software.

As PI concedes, the “memory section controller” must be capable of detecting faults in the memory section or memory device and transmitting a fault message in response to the

detected faults. Indeed, every claim reciting the “memory section controller” defines it as having this capability, as does the written description. *See* ’662 Patent, Summary, 2:15-19.

Claims may be construed only “with a full understanding of what the inventors actually invented and intended to envelop with the claim.” *Renishaw*, 158 F.3d at 1250, *quoted in Phillips*, 415 F.3d 1303. Here, the named inventors contemplated that a memory section controller would be a physical device. The only disclosures in the written description of a memory section controller that can perform this function describe it as a physical device. *See, e.g.*, ’662 Patent, 12:65-13:14 (describing fault detection as performed by or through physical components of memory section controller); 22:55-23:7 (same). Contrary to PI’s proposed construction, there is no support in the intrinsic evidence for the memory section controller being software. Indeed, the specification explicitly describes the memory section controller as itself executing software. *See id.* 23:1-4 (“[T]he section controller 54 may ... begin to isolate the fault through the error recovery capabilities present **in the software it executes.**”); 23:44-46.

Also, the consistent and repeated descriptions of the memory section controller as a physical device in the written description further establishes that the claimed memory section controller must be a physical device. *See Saffran v. Johnson & Johnson*, 712 F.3d 549, 560 (Fed. Cir. 2013) (construing “device” to be limited to a sheet where “extensive, consistent usage in the specification . . . suggests that the claimed ‘device’ should be understood as a sheet, which, rather than confining the term to a single embodiment, would accord with every embodiment and description presented in the ’760 patent, not to mention the prosecution history”).

The prosecution history reinforces this construction. In response to a rejection of dependent claim 4 of the ’177 Patent, which recites that “the management system is further capable of providing software images to the switch controllers and to the memory section controllers,” the patentee distinguished prior art by arguing that a “software image is commonly understood as a binary object code that may be run directly by a computer,” and that the reference “does not suggest or teach ‘providing software images to the switch controllers and to the memory section controllers’ because [the reference’s] control mechanism 58 and data

controller 18 do not contain a computer that could execute or be provided with a software image.” JCC, Ex. 2 at 12 (emphasis omitted). The patentee recognized that the claimed memory section controller must “contain a **computer** that could execute or be provided with a software image,” which completely forecloses any possibility that the memory section controller could itself be software.

PI attempts to broaden the scope of this term by pointing to the use of the term “may . . . include” in two sentences in the specification describing the memory section controller: (1) “[t]he [memory] section controller 54 may, for example, include a microprocessor 51, internal memory 52, a management complex interface(s) 53, memory device control circuitry 55, communications channel interface (CCI) control circuitry 57, test circuitry 59, timing circuitry 61, and a Header/test interface 63”; and (2) “[t]he memory section controller may also include memory device control circuitry 55 for controlling the memory devices 66.” (PI Term 10 Op. (quoting ’662 Patent, 11:27-34, 56-58)). However, the term “may . . . include” in these statements refers to the various physical components that may be included in the memory section controller, not whether the memory section controller itself may be software. As discussed above, the specification makes clear that the memory section controller is a physical device that itself executes software. PI’s proposed construction that the memory section controller may be software should therefore be rejected.

B. The intrinsic evidence requires that the memory section controller be separate from a memory device, switch, and management system.

Again, as discussed in Defendants’ Introduction *supra*, the three components of the claimed storage system—the one or more memory sections, one or more switches, and management system—must be distinct and separate from one another. The memory section controller resides within the first component, the one or more memory sections. Accordingly, the memory section controller within the memory section must be separate from the claimed one or more switches and from the management system.

In addition, the patents disclose the memory section controller and one or more memory devices as separate components of the claimed storage system. Each claim that recites a memory section controller describes it as being separate from the claimed memory device. *See, e.g.*, '177 Patent, claim 1 (“one or more memory sections, including: one or more memory devices . . . , and a memory section controller”). The specification further describes them as separate components. *See, e.g.*, '662 Patent, Summary, 2:15-19 (“The one or memory sections include one or more memory devices . . . , and a memory section controller”); FIGS. 5-7, 16. Finally, during prosecution of related patent application 10/284,268 (incorporated by reference into the Patents-in-Suit), the patentee described the improvements of the invention as including that the “memory device, memory section controller, and memory interface device have novel, improved interconnections and inter-functionality, as recited in the claims.” JCC, Ex. 6 at 3. The requirement that the memory device and memory section controller have interconnections necessarily requires these components to be separate.

Accordingly, the intrinsic evidence requires the memory section controller to be a physical device that is separate from a memory device, switch, and management system, and Defendants’ proposed construction for this term should be adopted.

Plaintiff’s Reply Position on Term 10:

Defendants’ proposed limits on this term continue their pattern of urging the Court to impose *physical* limitations on terms based on exemplary functional block diagrams. Defendants point to no text in the claims that require the memory section controller to be “a physical device . . . separate from a memory device, switch, and management system.” The Federal Circuit requires a textual “hook” to support such a proposed physical limits, and Defendants have identified none. *See NTP*, 428 F.3d at 1310.

Defendants’ argument that the claims and specification treat the memory section controller as a physical device separate from the “memory device, switch and management system” is belied by the specification itself. Figure 5 of the specification depicts an exemplar “memory section” block diagram that includes both a memory section controller (54) together

with memory devices (66). Further, Figure 2, which Defendants heavily rely upon and is an exemplar block diagram of the claimed inventions, depicts the memory sections (30-1, 30-2, 30-n), which, according to Figure 5, may include a memory section controller, in the same schematic “storage hub” housing as switches (22-1) and the management complex (26).

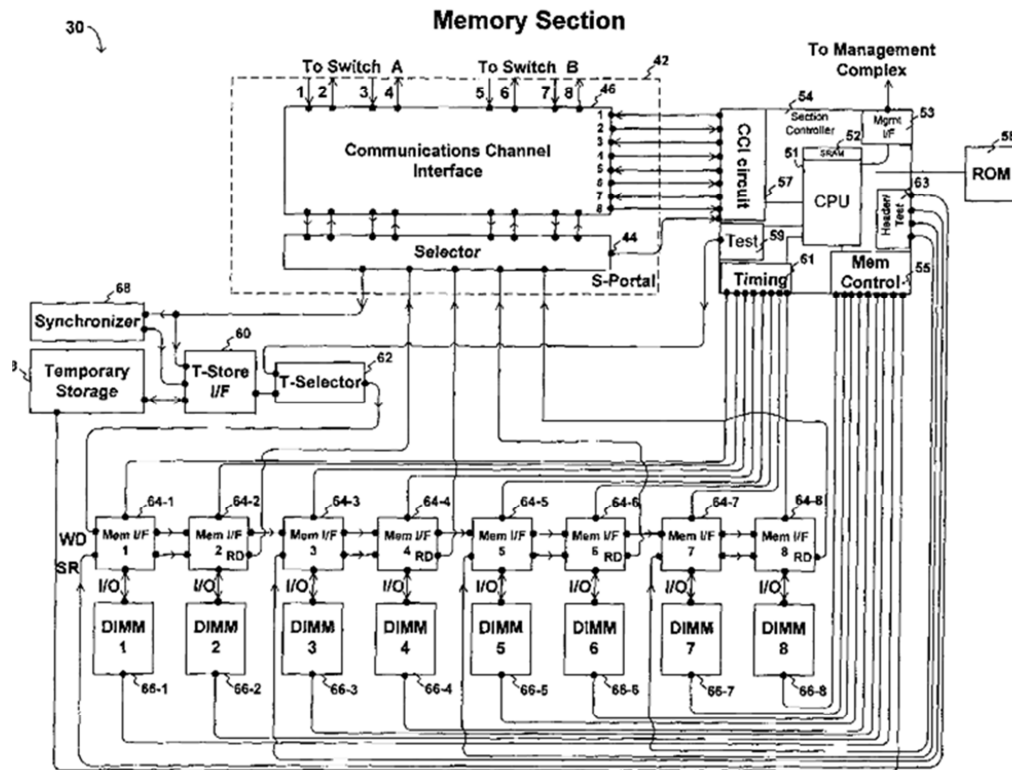


Figure 5

Regarding Defendants’ argument that the memory section controller may not be software, PI’s proposed construction recognizes, in accordance with the specification, that the memory section controller may include hardware. Neither the claims nor the specification requires that the memory section controller *must* contain hardware. The specification provides two exemplary embodiments where the memory section controller contains a microprocessor, but the specification makes clear that there may be other embodiments known to one of skill in the art. The specification never disclaims a memory section controller implemented in software. The

specification explains, in accordance with standard principles of claim construction, that the claims provide the limitations on the invention, including the memory section controller. (See ‘662 Patent at 2:33-40; 13:27-32.)

Defendants’ attempt to invoke the prosecution history of the ‘177 patent is not persuasive. Defendants once again do not provide the Court with the full context of the statement on which they rely. When making the quoted statement, the applicants were distinguishing a reference (“*Ferguson*”) from *dependent* claims, which necessarily add limitations to the independent claims. While the applicants argued that the “control mechanism” of dependent claim 4 does contain a computer, they recognized that the capability of “memory section controllers” receiving “software images” was not required by the independent claim 1. See JCC Ex. 2 at 12; see also *Phillips*, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to the presumption that the limitation in question is not present in the independent claim.”). Defendants identify no “clear and unmistakable disavowal of scope.” See *Purdue Pharma L.P. v. Endo Pharms., Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006). In fact, there is no such disclaimer.

Defendants’ Sur-Reply Position on Term 10:

A. All intrinsic evidence makes clear that the memory section controller is a physical device and cannot constitute software.

PI does not dispute that the asserted patents only describe the memory section controller as constituting hardware. Instead, PI argues that the specification *never specifically disclaims* a memory section controller implemented in software, and thus this should be incorporated into the construction for this claim. However, claims “must be read in view of the specification” which “is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1315 (quotation marks omitted). Here, the claims all require the memory section controller be capable of detecting faults in the memory section or memory device and transmitting a fault message in response to the detected faults—which the specification specifically describes as being performed by a *physical* memory section controller. Indeed, the specification makes clear that

the memory section controller must be a physical device, both by describing it as hardware, and by explicitly stating that the memory section controller *itself executes software*. See, e.g., '662 Patent, 12:65-13:14; 22:55-23:7; 23:1-4; 23:44-46.

PI also alleges that Defendants mischaracterized the Applicants' statements during the prosecution of the '177 Patent. PI argues that the Applicants' disclaimer somehow relates to a distinction between independent and dependent claims, instead of a disclaimer related to the claimed memory section controller. PI is mistaken. During prosecution the Applicants explicitly distinguished *Ferguson* because it did not "suggest or teach 'providing software images to the switch controllers *and to the memory section controllers*' because *Ferguson's* control mechanism 58 and data controller 18 do not *contain a computer that could execute or be provided with a software image*." (JCC Ex. 2 at 12). In making this statement, the Applicants specifically referred to the claimed memory section controller, which they argued "contain[s] a computer that [can] execute or be provided with a software image." This further shows that the memory section controller must constitute hardware.

B. PI's cited intrinsic evidence requires that the memory section controller to be separate from a memory device, switch, and management system.

PI does not dispute any of the intrinsic evidence Defendants cite, which shows that the memory section controller must be separate from a memory device, switch, and management system. Indeed, PI points to FIGS. 5 and 2 as accurately reflecting the claimed memory section controller. But these Figures *explicitly show the memory section controller as separate from a memory device, switch, and management system*. In FIG. 5, the memory section controller (54) is clearly separate from the memory devices (66), switch (which is outside of the figure and thus separate from the memory section), and management system (which is also outside of the figure and thus separate from the memory section). In FIG. 2, the memory sections (30) (which contain the memory section controller) are distinctly separate from the switches (22) and management system (26). Again, these three components can reside "in the same schematic 'storage hub'," but the figures, specification, and claims all require they be distinct from each other.

11) “removing from service the memory section from which the fault message was received”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|---|--|--|
| ‘622 Patent, claims 1, 4, 5, 6, 12-14, 17, 19, 20, 21; ‘177 Patent, claims 13 and 19; ‘388 Patent, claims 7 and 14. | Plain and ordinary meaning or alternatively, suspending normal read and write operations to the failed memory device | Configuring the switch/switch fabric to change physical interconnections so as to disconnect the faulty memory section from the storage system |

Plaintiff’s Opening Position on Term 11:

The term “removing from service the memory section from which the fault message was received” should be construed according to its plain and ordinary meaning. The plain language of the claim term is clear, and no construction is necessary. In the alternative, the Court should construe the claim language as “suspending normal read and write operations to the failed memory device,” as this properly construes the claim language in light of the specification.

The Defendants’ proposed construction seeks to unduly limit how of “removing from service” can be performed. The language of the claims specifically defines how this function is carried out and requires no further construction. For example, claim 13 of the ‘177 patent states “the management system removing from service the memory section from which the fault message was received *by changing the routing algorithm.*” The Defendants improperly ignore the rest of the claim’s language, and try to import this limitation as to how the “removing” is done.

The Defendants also seek to unduly narrow this term to “physical interconnections.” This limitation of a physical interconnection is not supported by the plain language of the claim term. All that the claim term requires is “removing from service the memory section from which the fault message was received,” and is not limited to a particular manner of how this suspension is performed. The specification states that “[a]s yet another example, in the event the control processors 34 determine that a memory section 30 is faulty, the control processors 34 may direct that the entire memory section 30 is taken out of service and that a replacement memory section

takes its place.” ‘662 Patent, 8:61-65. The specification is not limited to how the memory section is “taken out of service” and makes no mention to either disconnecting or changing physical connections as Defendants seek to require.

Although some of the preferred embodiments in the Patents-in-Suit describe using a physical path through hardware, it is improper to write a limitation from the specification into the claims. *Phillips*, 415 F.3d at 1319-20. For example, claim 14 of the ‘662 Patent lacks a switch fabric, which is construed by the Defendants to be a physical interconnection. (See claim term 13 below). Claim 14 of the ‘662 Patent has a broad scope and is not limited to any particular physical interconnection. The “removing from service the memory section from which the fault message was received” element of claim 14 of the ‘662 Patent does not necessarily have to execute a switch for configuring a path to a physical interconnection because this claim lacks a switch fabric altogether. The physical interconnection limitation that the Defendants seek to read into this claim term is the same as the Defendants’ proposed construction of the term “switch fabric” and not that of the term “removing from service the memory section from which the fault message was received.” Therefore, the Court should adopt the plain and ordinary meaning, or alternatively Parallel Iron’s proposed construction.

Defendants Answering Position on Term 11:

As used in the asserted patents, removing a memory section from service requires (1) physically disconnecting it, and (2) actually removing the **memory section** from service—not merely a memory device.

A. Removal from service requires physical disconnection, not mere suspension of operation.

The ability to remove faulty memory sections from service is central to the alleged invention. *See* Patents-in-Suit, Abstract; ‘662 Patent, 2:24-28 (“management system is provided capable of receiving fault messages from the memory section controllers and removing from service the memory section from which the fault message was received”). The specification provides a clear written description of what is meant by removing these memory sections from

service--changing the physical interconnections that connect that memory section to the storage system. If a physical interconnection is changed, then a faulty memory section is necessarily **disconnected**.

The specification recites repeatedly that faulty memory sections are taken out of service and replaced by *new* memory sections. *See* '662 Patent, 8:19-22 (“In the case a memory section 30 has failed, then the faulty memory section 30 may be replaced and a **new** one brought into service.”); *id.* at 8:7-9 (the management system contains control processors capable of “bringing **new** memory sections into service and taking memory sections out of service”) (emphasis added); *id.* at 8:61-9:7. The management system instructs the switch to remove the faulty memory section from service and bring the replacement into service. *Id.* at 8:13-19; *id.* at 8:27-30 (the control processors of the management system “take corrective action in response to the detection of a fault” by “re-map[ping] data to working memory sections.”) As discussed above, a switch is the conduit between the memory section and other components of the system and contains a switch fabric, which is a physical interconnection architecture. Defendants’ proposed construction, which requires the memory section to be removed from service by changing physical interconnections, is consistent with the specification’s description of using a switch to remove the memory section from service.

The requirement that removal from service be accomplished by changing physical interconnections is also supported by the prosecution history of the '177 Patent. During prosecution, applicants distinguished the prior art by arguing that the interconnections in the prior art system were “hardwired” and not “changeable,” unlike the claimed switch fabric that could change the interconnections between memory sections and other components. *See* File History of the '177 Patent, Feb. 23, 2009, Reply to Office Action. Thus, the applicants disclaimed inactivation of the memory section that could be accomplished in a “hardwired, unchangeable” system, such as *Ferguson*. PI should not now be able to reclaim such scope through claim construction by having “removing from service” construed to mean “suspending

normal read and write operations,” which would not distinguish a system having hardwired, unchangeable connections to memory sections. *Omega Eng’g*, 334 F.3d at 1323.

PI’s proposed construction inserts the concept of “suspension of operation.” As discussed above, the uniform approach to addressing faulty memory sections is replacement with a new memory section. There is no reference in the specification to merely suspending operations of a faulty memory section. Nor is there any reference to bringing a previously faulty memory section back into service. PI’s proposal should be rejected. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1585 (Fed. Cir. 1996) (finding evidence was “entitled to no weight in light of the clear contrary meaning shown in the specification”).

B. The entire “memory section” must be removed from service.

The claim language unambiguously requires that the “memory section” be removed from service. *See, e.g.*, ’662 Patent, Claim 1 (“removing from service the memory section”). PI nevertheless proposes that the term “removing from service the memory section from which the fault message was received” be construed to mean “suspending normal read and write operations to the failed memory device.” There is no basis, however, to replace the clear claim term “removing” with “suspending,” which have different meanings. There is also no basis for PI’s substitution of “memory device” in place of “memory section.” The claims and specification provide that “memory sections” include one or more “memory devices.” *See, e.g.*, ’662 Patent, Claim 1 (“one or more **memory sections**, including one or more **memory devices** having storage locations”); 2:15-19 (“The one or memory sections include one or more memory devices. . .”). The term “memory section” is therefore not interchangeable with the term “memory device.” *See Becton*, 616 F.3d at 1254 (“Claim construction begins and ends in all cases with the actual words of the claim.” (internal quotation marks omitted)). And as described above, the specification recites repeatedly that faulty memory **sections** are taken out of service, not memory devices. *See* ’662 Patent, 8:13-22; 8:7-9; 8:61-9:7.

Plaintiff's Reply Position on Term 11:

Defendants' proposed construction again attempts to add an entirely absent "physical" limitation to a term that should be afforded its plain and ordinary meaning. In addition, Defendants suggest that after a memory section is removed from service, it must be removed permanently. No claim element in any patent and no passage in the specification requires permanent removal.

Regarding Defendants' proposed and additional unsubstantiated requirement that a memory section be physically disconnected, Defendants' position is refuted by the claims themselves. For example, claim 13 of the '177 patent requires, in pertinent part, "the management system removing from service the memory section from which the fault message was received *by changing the routing algorithm*." This change of algorithm is not a physical change, and Defendants have improperly asked the Court to add a limitation that would make the claims unworkable.

In addition, Defendants once again place undue reliance on a single statement, taken out of context, made during the prosecution of the '177 patent. The "*Ferguson*" reference at issue, discussed *supra*, included static, "hard-wired" interconnections between memory sections and other components. Applicants distinguished the claims from this reference on the basis that the connections in *Ferguson* were not changeable, unlike the claimed connections. Applicants' basis for distinguishing *Ferguson* did not involve physically disconnecting memory sections. As explained above, *Ferguson* relied on redundant connections instead of communication with a controller as a means of handling faults. See '177 Prosecution History, 2/23/2009 Reply to Office Action. Defendants' argument that somehow the applicants disclaimed "suspending normal read and write operations" because they distinguished a reference on unrelated grounds is confusing, unsupported, and legally deficient. See *Purdue Pharma L.P. v. Endo Pharms., Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006) (requiring a "clear and unmistakable disavowal of scope during prosecution").

In fact, Defendants’ attempted reliance on applicants’ statements distinguishing *Ferguson* actually refutes their argument that faulty memory sections must be permanently removed from service. *Ferguson* constituted static hard-wired connections, which applicants distinguished because the claimed connections were not static and were changeable, *i.e.*, could be turned on or off. Accordingly, faulty memory sections could be turned off, rebooted, or otherwise repaired, and then turned back on – permanent removal is not required.

Defendants’ Sur-Reply Position on Term 11:

PI does not contest that removing a memory section from service requires removing the *entire* memory section from service. The only dispute is whether removing from service requires a physical disconnection of the faulty memory section.

As explained in the “algorithm” and “switch” term sections of this brief, a physical architecture interconnects the components of the claimed storage system, including the connections to the memory sections. Thus, when a memory section is removed, it is removed by changing a physical interconnection. PI attempts to argue against physical removal by citing claim language that states a memory section can be removed by “changing the routing algorithm.” But, as explained for the “algorithm” terms, the switch / switch fabric executes the new routing algorithm to change a *physical* path between the memory sections and the other components of the system.

The prosecution history further shows that “removing from service” is accomplished by physically disconnecting a faulty memory section, and not merely by “suspending normal read and write operations,” as PI suggests. PI admits that the “[a]pplicants distinguished the claims from [the Ferguson prior art reference] on the basis that the connections in Ferguson were not changeable, unlike the claimed connections.” Thus, the Applicants specifically distinguished the claimed switch fabric—which PI admits is a physical interconnection architecture—from Ferguson’s *unchangeable* hardwired system on the basis that the claimed switch fabric is *changeable*. It would be inconsistent to construe “removing from service” as merely “suspending” operations while maintaining a physical connection, because this is exactly what

the disclaimed Ferguson system already did. *See* File History of the '177 Patent, Feb. 23, 2009, Reply to Office Action.

12) “non-volatile storage device”

| Claims | Parallel Iron’s Position | Defendants’ Position |
|--|--|--|
| ’662 Patent, claim 1. 2, 14-16; ’388 Patent, claims 4, 9, and 15. | Plain and ordinary meaning or alternatively, dedicated storage device which is capable of retaining data without power | dedicated storage device separate from a memory section, which stores back-up versions of data and is capable of retaining data without continuous power |

Plaintiff’s Opening Position on Term 12:

The term “non-volatile storage device” should be construed according to its plain and ordinary meaning. The term non-volatile storage device is well known to one of ordinary skill of art and needs no construction. For example, Merriam-Webster defines “non-volatile” as “of a computer memory: retaining data when power is shut off.” (<http://www.merriam-webster.com>).

Again the Defendants’ construction seeks to improperly narrow the claim term by specifying that the storage device is “separate from a memory section.” The specification discusses a “non-volatile storage device” broadly, as a device that “may be used to store back-up versions of the data stored by the storage hub 10.” ’662 Patent, 3:39-42. There is nothing in the plain language of the claims or the specification to limit the storage device to being “separate from a memory section.” The claim term is broad and not limited to a particular relationship with a memory section, and should be construed accordingly.

The Defendants also unduly limit the term by proposing the non-volatile storage device be capable of retaining data “without continuous power” and requiring that the device “store back-up versions of data.” The term “continuous” is unduly narrow and not supported by the intrinsic evidence. The specification states that loading of memory sections from the non-volatile storage device is done when the memory section may have “lost power in an outage.” ’662 Patent, 10:51-57. This loading of data from the non-volatile memory device implies that

the non-volatile memory device is capable of retaining data without power in the event of a power failure. However, there is no support for the Defendants' construction that the non-volatile memory device is only capable of retaining data without "continuous" power. The dictionary definition provided above is also not limited to the ability to retain data without "continuous" power. Likewise, the specification contains no support for requiring the non-volatile storage device to store "back-up versions of data" only that it "may" store back-up versions of data. '662 Patent, 3:39-42.

Accordingly, the Court should limit the claim term to its plain and ordinary meaning. In the alternative, the Court should construe this term as a "dedicated storage device which is capable of retaining data without power," as this does not include Defendants' erroneous limitations.

Defendants Answering Position on Term 12:

There are two disputes between the parties regarding the construction of the term "non-volatile storage device": whether the non-volatile storage device (1) "stores back-up versions of data" and (2) is separate from the claimed "memory sections."²¹ As the intrinsic evidence demonstrates, both conditions are necessarily true in the claimed invention.

Again, claim terms must be construed with an eye toward determining what the inventor actually invented. *E.g.*, *Renishaw*, 158 F.3d at 1250. All the intrinsic evidence demonstrates—as PI concedes—that that the named inventors contemplated a non-volatile storage device that "store[s] back-up versions of data." (PI Term 12 Op. (citing '662 Patent, 3:39-42).) Indeed, the specification only describes the non-volatile storage (referred to interchangeably in the patents as the CDA 16 [cached disk array]) as being back-up storage for the memory sections in the event that a memory section fails. *See, e.g.*, '662 Patent, 3:39-42, 4:19-30, 10:44-57, 15:9-22, 19:21-35 ("The version of the data stored by the CDA 16 will be treated as a back-up version that in the

²¹ PI also argues that Defendants' construction is improper because it requires that a non-volatile device be "capable of retaining data without **continuous** power." (PI Term 12 Op.) Defendants are amenable to dropping the word "continuous" from their proposed construction.

event the memory section suffers a fault may be loaded onto a different functioning memory section.”), FIGS. 1 and 2. Further, the claims consistently describe the data in the non-volatile storage device as “back-up” copies of the data stored in the memory sections. *See, e.g.*, ‘662 Patent, Claim 2 (“instructing the storage system to store a back-up of data . . . into the non-volatile storage device”), and Claim 3 (instructing the “non-volatile storage device to load the back-up . . . data”); *see also* ‘662 Patent, Claims 5, 10, and 14-16; ‘388 Patent, Claims 4, 9, and 15. There is no intrinsic evidence—and PI cites to none—to suggest that the non-volatile storage device does anything but “store[s] back-up versions of data.”

Second, the claim language and specification also expressly require that the claimed “memory sections” and the “non-volatile storage device” be **separate** components. *See, e.g.*, ‘662 Patent, col. 3:39-42, 4:19-30, 10:44-57, 15:9-22, 19:21-35, FIGS. 1 and 2 (both figures showing the CDA 16 as a separate, external device from the Storage Hub 10 and Memory Sections 30-1 to 30-n); ‘662 Patent, Claims 1-3, 5, 10, and 14-16; ‘388 Patent, Claims 4, 9, and 15. This is consistent with the ordinary understanding of claims that recite multiple elements. *See Becton*, 616 F.3d at 1254. Moreover, it would be nonsensical in the context of the invention for the “memory sections” and the “non-volatile storage device” to be the same device, because the whole point of the “non-volatile storage device” is to “store[s] back-up versions of the data stored [in the memory sections],” as PI admits. (*See* PI Term 12 Op.) The claimed invention would not work if the back-up versions of data were stored on the same device that stores the primary data. In the event of a fault, all the data would be lost.

Plaintiff’s Reply Position on Term 12:

Defendants fail to explain how this term requires additional limitations. The additional limitations of the “non-volatile storage device” exist in the claims already. Defendants attempt to inject their own hand-picked additional limitation. Defendants cite no arguable disclaimer in a file wrapper and no definition in the specification to support its improper proposed construction of this simple term.

In fact, Defendants' improper proposed limitations are refuted by the specification. For example, Figure 5, which depicts a block diagram of an exemplar memory section, contains a "temporary storage device" that may be a "disk-drive" or any other type of memory. '662 Patent at 12:45-47. "Disk-drives" are non-volatile storage. Therefore, the specification expressly describes a memory section that contains a non-volatile storage device, and Defendants' argument that a non-volatile storage device must be "separate from a memory section" is incorrect and should be rejected.

Defendants' Sur-Reply Position on Term 12:

PI does not dispute that the intrinsic evidence exclusively describes the "non-volatile storage device" as storing back-up versions of data, and PI concedes that this construction is consistent with the claim language.

The claim language and specification show that "memory sections" and "non-volatile storage devices" are separate and distinct elements. PI misconstrues the patents to argue that these claimed devices need not be separate; specifically, PI cites a portion of the specification that states that memory sections can include a "temporary storage device." But that is irrelevant because a "temporary storage device" is not a "non-volatile storage device" according to the claims. The claims themselves require that a "temporary storage device" is used "for storing data *to be written to* a memory device." '662 Patent, Claims 13, 21 (emphasis added); *see also* '388 Patent, Claims 6, 13, 17. In other words, the "temporary storage device" is a temporary buffer to hold data while "a memory device to which the data is to be written is busy." *Id.* A "non-volatile storage device," however, is a separately-claimed element. The claims reciting "memory sections" and "non-volatile storage devices" do not provide that "memory sections" can include "non-volatile storage devices." '662 Patent, Claims 1-3, 5, 10, 14-16; '388 Patent, Claims 4, 9, 15. This is not surprising—"non-volatile storage devices" provide a very different function from the separately claimed "temporary storage devices": "non-volatile storage devices" provide permanent back-up storage for data stored in the "memory sections" in case the "memory sections" fail. They are not temporary buffers. Thus, whether memory sections may

include “temporary storage devices” is irrelevant. The “temporary storage devices” are different components altogether from the claimed “non-volatile storage devices.” Every description in the specification shows that “memory sections” and “non-volatile storage devices” are separate and distinct, and such a construction is required by the claim language itself.

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